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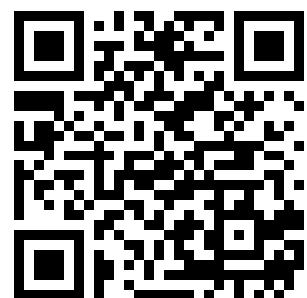


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Graphite

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Graphite

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No. 2.

Issued in the interest of Dixon's Graphite Productions, and for the purpose of extending our knowledge and understanding in regard to the different forms of Graphite and their respective uses.

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GRAPHITE.

BY JOHN A. WALKER, VICE-PRESIDENT
JOSEPH DIXON CRUCIBLE CO.



Graphite is a word that a few years ago would have sent the ordinary reader to the dictionary, but now, perhaps more from the popularity of graphite pencils than from any other cause, it has become a household word. Still, while not a recondite subject, few, even of the well-informed, dream how indispensable this mineral is to modern civilization. Not a single iron casting is taken from its sand mould without the sand being first faced by graphite; not a gun projectile is cast but the steel is melted in a graphite crucible; not a tool, not a saw is made but from graphite crucible steel. Every pound of nickel, of copper, of composition metal, of brass, is cast in some way, the metal being reduced in a graphite crucible. Every printing house, for the perfection of its electrotypes, is absolutely dependent on graphite. Every electrician and every department of electrical work comes under the same tribute. Graphite lubricates friction ways, it is notably the most enduring paint pigment, and the bulk of the writing done on the globe to-day is done with a graphite pencil; it has ministered to the arts of peace and to the science of war. It saves labor and it proves a short-cut to desired results. In brief, not a factor which to-day contributes to civilization but is helped by graphite. It is found in great abundance in the island of Ceylon, in the Indian Ocean, and next in quality and quantity at the graphite mines at Ticonderoga. The industry is fascinating from the moment the miner drives his drill, and all along the line of its being refined until both in usefulness and beauty it reaches perfection. The electric light

would shine much less easily but for graphite, and the production of steel rails is equally dependent. The beautiful mineral has peculiar charms and characteristics. Heat and cold, and the highest and lowest extremes of both, cannot touch it. It can bathe in acid as does a pebble in cold water.

OBSERVATION.

The habit of observation or taking notice is a pleasing and profitable one and deserves a larger cultivation than it has. It is pleasing because of the curious things we see and learn, and profitable because it frequently saves us time and trouble.

Last month a gentleman wanted to know what day of the week the seventeenth of September was. He was in a hurry to know, and hunted and fumed until he found a September calendar and learned that the seventeenth day of September was on a Saturday. If he had been a closer observer of the calendar he would have known that the December calendar, which he had before him, was equally useful for September, and that the November calendar will answer for March and February. There are other interesting facts about even such an ordinary, every day thing as a calendar.

CHOOSE a pencil fitted for the paper you are using, as well as for the work you are doing. For mechanical drawing, where very fine lines are to be made, try Dixon's No. 219 $\frac{1}{2}$. Eminent engineers claim it is without an equal for clean sharp work in detail drawing.

Editors usually prefer a soft, easy writing lead, and for them Dixon's No. 342 is none too soft. For editors who do manifold work there is no pencil equal to Dixon's No. 342. For bookkeepers, stenographers and general office work there are three or four grades which very fully cover the requirements. For bookkeepers the Hard, or Medium Hard, are admirable pencils for ledger work, while the Soft Medium will answer for almost any quality of paper.

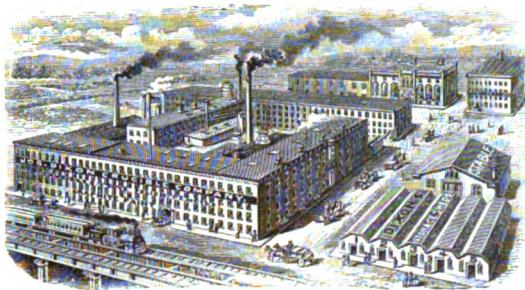
For stenographers we have Soft, Soft Medium and Medium pencils, which fully meet all requirements of expert stenographers.

For general users there is a choice of over seven hundred different kinds and styles.

Dixon's American Graphite Pencils represent American industry in that they represent American material, American machinery, American capital and American labor.

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PLUMBAGO MINING.

A Colombo journal gives an interesting description of the manner in which the natives of Ceylon mine for plumbago. A native usually drives a shaft until he is no longer able to contend with the flow of water in the mine. He then stops working, and afterwards drives galleries, and this he continues to do as long as his lamps will burn; but the moment they are extinguished by the gases collected in the gallery he ceases working in that part and continues upwards, refilling the shafts he has dug with the *debris* from the mine. In other cases, instead of sinking a shaft, a large open cutting is made, in which the vein is followed, and galleries afterwards run as occasion may require. There is no system for ventilating the mines, and the result is that after a blast much time is wasted before the mine is sufficiently cleared of foul gases to allow working to be resumed. The great object of the native proprietor is to keep his expenses as low as possible. As to the timber he is using, he knows nothing of its strength, and is quite unable to work out the strain it will stand. The result is that the shafts and galleries are frequently insufficiently timbered. The windlass used is frequently not strong enough and has no ratchet-wheel, so that serious accidents may occur in raising and lowering miners. The rope is the ordinary coir rope of the country, the strength of which varies very much according to the make and the quality of the fiber used. Instead of ropes, ladders are frequently used by the miners, and these are made of the roughest materials and frequently tied with single rope or ordinary coir yarn. There is no regulated distance between the rungs, and the ladder is placed perpendicularly to the bottom of the pit; and when it is remembered how highly lubricated the wood must get from

the hands and feet of the natives who have been working plumbago, the great danger they run every time they mount and descend can be well conceived. Various minerals are dug out of plumbago mines with which the natives have no acquaintance, and consequently valuable minerals are sometimes thrown away. Pitchblende, known as a valuable ore of uranium, has been found inside plumbago; pyrrhotite also is found largely in plumbago mines, from which, in other countries, the greater part of the nickel of commerce is extracted.

(*Exchange.*)

"MODERN science is leading us into a region where the miracle of the preceding century becomes the ordinary occurrence of the next; when the mere projection of fancy of fifty years ago is the utilized effort of the immediate present."

The date of the use of graphite for general purposes is well within the present century. It began in 1827, when Joseph Dixon introduced his plumbago crucibles and "carburet of iron" stove polish. There was nothing of the selfish or sordid spirit in the utilitarianism of Joseph Dixon. He was quick to commend and advocate some new use for graphite, before waiting to reap the benefit of previous labor and study. It would have been a fanciful mind indeed that could have, in the previous century, pictured the uses of graphite in the present century. They are almost innumerable and of inestimable value. The results produced would have bordered on the miraculous in the previous century.

THE "GRAPHITE."

Under the taking heading of "Graphite," with date of December, 1898, the Joseph Dixon Crucible Co., Jersey City, N. J., have issued a striking little paper which is "issued in the interest of Dixon's graphite productions, and for the purpose of establishing a better understanding in regard to the different forms of graphite, and their respective uses."

In a very taking and cordial salutatory, the editor more fully expresses the purposes of this publication, in the following words:

"Our enthusiasm in the possible uses of graphite has not abated even with the knowledge that we now have that graphite, in some form or other, is used by every civilized person on the face of the earth. We fully believe that the uses of graphite will largely increase and that the industry is only in its infancy, and it is for this reason that we hope to regularly issue this publication in order to establish a better understanding in regard to the different forms of graphite and their respective uses; for the fullest success in the use of graphite is due as much to the selection of the proper kind for the work as to its proper preparation."

The same brightness and directness of expression which have been noticeable features of all the literary productions emanating from this great company, are shown in this little publication.

(*Hardware, Dec. 25, 1898.*)

A TRAMP, while begging a meal, said he was a typical American, as his hat had "no crown."

GETTING DISSATISFIED.

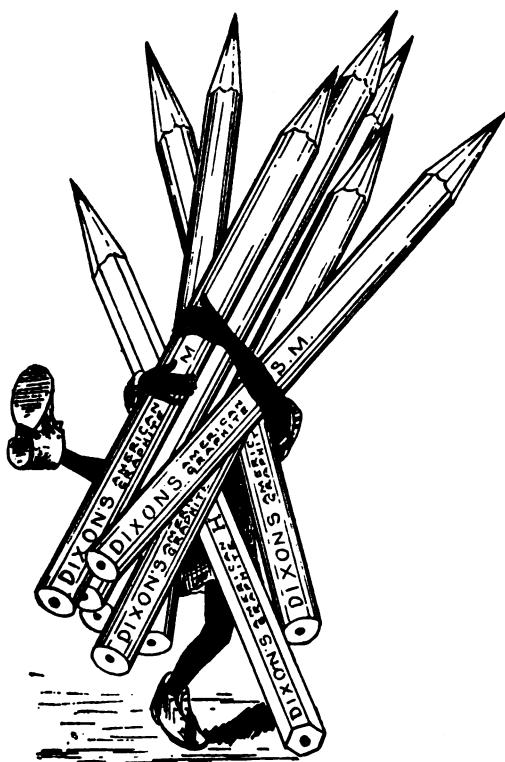
Many people who have been strong advocates of red lead or metallic paints for roofs and other exposed surfaces are now expressing much dissatisfaction with their heretofore favorite paints.

Possibly it is because they are not blind to the fact that surfaces properly painted with Dixon's Silica-Graphite paint have not required repainting in ten to fifteen years, and even longer.

Possibly it is also because they are not deaf to the statement made by most disinterested persons, that where different paint pigments have been most carefully tested side by side and under precisely the same conditions, graphite has far surpassed all other paint pigments in durability, flexibility, elasticity, covering power and economy.

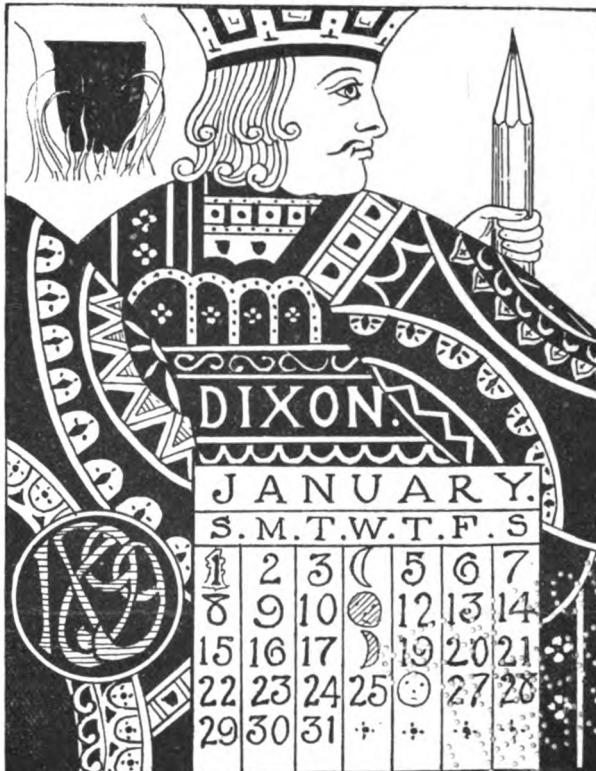
We are beginning to think this a graphite age, as graphite predominates everywhere.

HUSBANDRY was the only form of labor that was not considered unbecoming in a Roman citizen. It was cultivated as a science and practiced with singular success. We Jerseymen follow the same pursuit with good success, but our Hobokus farmer is hailed as a hayseed, and even our citizen farmer from classic Hoboken is belated in an unbecoming manner.



There is only one question in regard to a Dixon "American Graphite" pencil, and that is: "What do you want it for?" If for writing on a very soft paper you will require a pencil like Dixon's No. 342 crayon, or some other popular soft grade of pencil. If for ledger work, then you will need an "H" or may be an "M H."

Telephone your dealer just what you want, and he will send his youngster with an armful, and you can take your pick.



As this auspicious day began to race
Of every virtue join'd with ev'ry grace;
May you, who own them, welcome its return,
Till excellence, like yours, again is born.

JEFFERY.

A NEW CHRISTMAS CAROL.

We find the following verses in the Christmas number of *THE JOURNALIST*. We cannot give to the world the name of the poet, as we don't know it, but it may be **ALLAN FORMAN**, the accomplished editor of *THE JOURNALIST*, who believes what he says and says what he believes.

SONG OF THE GRAPHITE.

The Dixon's Lead. Ah, many a night
'Till darkness died in morning bright
It helped me o'er the weary page
And did my weariness assuage,
Like to some gnome or Gothic sprite.

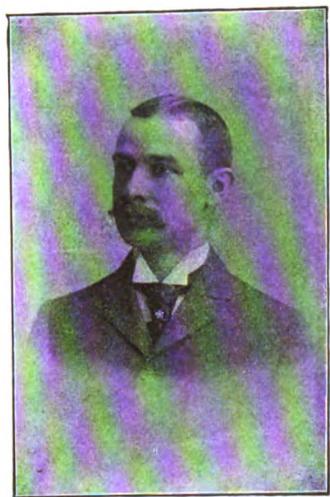
In script or copy, black and white,
I use, whenever I sketch or write
Or literary warfare wage,
The Dixon's Lead.

Of all the pencils mortal wight
E'er fashioned in a happy plight,
Or chemist made, or planned by sage
In this or any other age—
Of all that ever saw the light,
The Dixon's led!

Over the winter glaciers
I see the summer glow,
And through the wild-piled snowdrift
The warm rosebuds below.

EMERSON.

OUR PHILADELPHIA BRANCH.



WM. J. COANE,
MANAGER PHILADELPHIA BRANCH.

Our Philadelphia branch is both an office and a salesroom. It is stocked with a full line of Dixon's graphite products and a well equipped office force, competent and prompt to answer any and all inquiries, and to execute all orders. It is not an agency, but a *bona fida* branch of the Dixon Company. It looks after all business in south-eastern Pennsylvania, lower New Jersey, Delaware, Maryland, District of Columbia, and Virginia.

INTERESTING LETTERS.

Probably no firm or company gets more interesting or more peculiar letters than the Dixon Company. They come from all parts of the world, and sometimes are peculiarly interesting. Here is one from Norristown, Pa., that is well worth reading:

"On the 21st of September, 1893, while I was geologizing in a field near Norristown, I discovered fossilized Indian corn. I brought home one rock that has at least a quarter peck of ears of corn in it, the grains radiating from the cob being perfect *rock crystals*. To proof clearly that it was corn, the fossilized corn is imbedded in the top of the rock, which rock is now limestone formed from carbonate of lime, that was being soaked out of the soil and drifting over the surface of the earth during the deluge Moses speaks of in Genesis.

It is particularly noticeable that there are a number of pockets in the rock first named which have rock crystals in them, projecting perpendicularly from their place of projection, the same as a drop of perspiration on your forehead. We know that Indian corn is of less specific gravity than water—, hence it composes the upper portion of the rock. Moses also tells us that on the 17th day of the second month Noah entered the Ark, which was on the 17th day of November as we know it, because the Jews reckon October the first month in their year, when the rain descended and the flood came. I have walked over about three acres which bear strong evidence of an antediluvian corn field. Now in solving the mystery of impurities in plumbago, or graphite, as it is called, we have only to decide that the world was destroyed by water, and never restored to its former beauty

and fertility. This carbonate of lime, which was soaked out of the earth, which formed its natural fertilizer, is now found as slate in coal and graphite. In every instance we find it had silica diffused through it. You go into the Mammoth Cave of Kentucky to-day, you will find liquid silica yet dripping from stalactites on the floor of the cave. The earth was only 1656 years old when it was destroyed by water; mineral substances were not yet crystallized as they are now. It is also known that rain water is a powerful solvent; its action liberated the silica from the carbonate of lime, and we now find small pockets through the limestone with rock crystals in them, formed from silica which was held in solution, forming small pools through the carbonate of lime, which was a pasty substance, like mortar, during the flood; when it crystallized a shrinkage took place, and also a contraction of the liquid took place—hence we now find the silica in those pockets like crystallized alum.

In reviewing your very satisfactory answer: "Graphite from the coal regions frequently contains slate; graphite from Michigan is largely made up of slate"—"That mined in Ticonderoga, N. Y., contains no slate whatever, but does contain silica and calcite,"—it must be observed that *calcite* is a general term under which are comprised the different varieties of carbonite of lime, hence it may be classed as a slate. When we go into the coal field, we find ferns and different kinds of organic matter imbedded in the slate, but none in the coal, thus proving that the carbonate of lime was soft, in a pasty slush, like our calcined plaster would now form if it was wet, just adapted to receive ferns or like delicate vegetation, and when crystallized bear an exact impress. It may be further observed that the silica thus liberated from the carbonate of lime has diffused itself through the coal—, giving it that glassy appearance and causing a conchoidal fracture, like glass; the vegetation forming the coal has turned black from the presence of sulphur. Bituminous coal has been formed of timber of an oleaginous character like turpentine, which greasy substance refused to assimilate with the oxygen or rain water that fell on the surface and percolated through it.

When we come to the graphite in Ceylon, we find that it is entirely free from either silica or slate, which is satisfactory evidence that if there ever was carbonate of lime diffused through the soil there, that it was all swept into the Indian Ocean during the deluge. A great portion of that island lies low, and it might easily have been carried into the ocean, thus affording a graphite to-day pure from either silica or slate—for where we find the one the other abounds also.

I have enclosed a photogravure from a rock I had photographed, which was taken out of the tunnel through which the Phila. & Reading R. R. passes beside the Schuylkill River, near Manayunk, Philadelphia, Pa.

It shows white quartz in the bottom of the rock, and granules of granite deposited between the quartz rock, with subsequent stratas piled up on top of each other, which are mostly composed of granite, in places with a trace of carbon through it, caused by vegetation drifting in the time and coloring with sulphur. You can notice the water lines which are streaked through the granite.

This shows that quartz was the first and granite next in order of crystallization."

Graphite

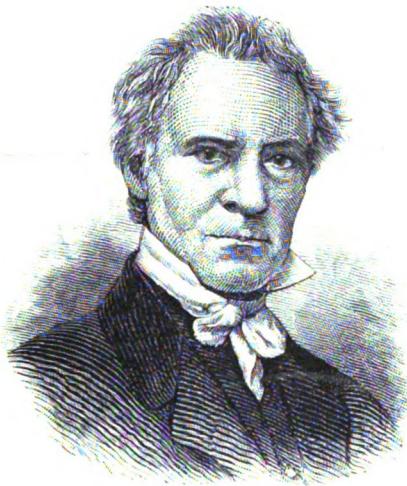
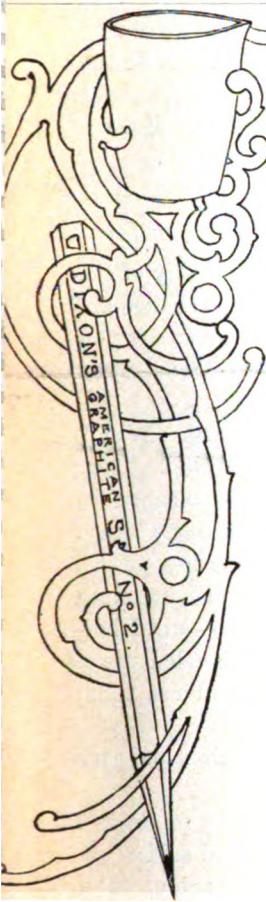
THE NEW YORK
PUBLIC LIBRARY
MORSE, LENOX AND
TILDEN FOUNDATIONS
NO. 5.

VOL. I.

FEBRUARY, 1899.

Issued in the interest of Dixon's Graphite Productions, and for the purpose of establishing a better understanding in regard to the different forms of Graphite and their respective uses.

COPYRIGHTED BY THE JOSEPH DIXON CRUCIBLE CO., JERSEY CITY, N. J.



JOSEPH DIXON,
Founder of the Dixon Company and
probably the first Manufacturer
of Lead Pencils in America.

If it is true—and who doubts the correctness of the saying—that “the pen is mightier than the sword,” the claim may be justly made that the pencil not only outnumbers both of these, but is more useful and more used than the pen, and at once prettier, more peaceful, and less disastrous and destructive than the sword.

Before pencils were invented and used, goose quills did the work that both of them are now appointed to do. There were *lead* pencils then; something unknown at the present day, although the general speech of the people is now and then of a lead pencil. But lead or no lead, the crude plummet and pencil of only two or three generations ago, has been evolved into the handy, useful and attractive looking pencil of to-day; has gone the way of all the earth, with the wafer-box, in which were stored the thin, round, red wafers, with which we sealed our letters; the more aristocratic stick of sealing wax; and the sand-box that held the sand, then doing the service which the blotter pad does now.

Joseph Dixon, founder of the Joseph Dixon Crucible Company, was a native-born Yankee, having first seen daylight at Marblehead, Mass., in the last year of the eighteenth century. His greatest invention was that of the plumbago or black lead crucible, for reducing metals, and he had also a wide and valuable reputation as a manufacturer of Dixon's “Carburet of Iron” Stove Polish, and was known to have been a manufacturer of lead pencils—though not in a large

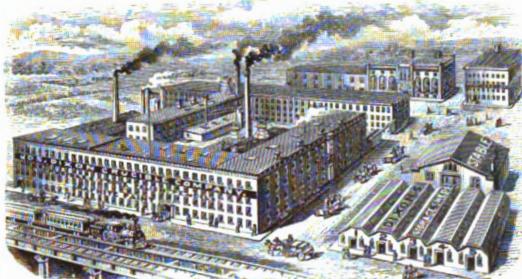
way. A lead pencil—unless graphite may be called “lead” from its long use in the manufacture of what are known as “lead” pencils,—is not lead, but graphite, which is a form of carbon. The copy for this article was written with a lead pencil, so are thousands of other papers, sermons, addresses, editorials, reports, business documents, political harangues, commercial memoranda, etc., and it is the Joseph Dixon Crucible Company's graphite pencils that are doing the larger part of this world-wide work-day service, easily, serviceably and satisfactorily.

“Where liberty dwells, there is my country,” and it may as surely, if not patriotically, be said, where paper dwells, there is the pencil. The connection between these sayings is in “the application on't,” and in recognition of the solemn fact that liberty would not be worth much without paper, and the country, nowadays, of much account without a pencil. The evolution of the old-time lead plummet, and the omnipresent pencil of to-day may well furnish foundation material for a brief but interesting story illustrated with sketches of a schoolboy, and a schoolgirl as well, with “plummet” and “ruler,” drawing the lines for a forthcoming writing lesson, on a sheet of foolscap paper; when the scratchy tracings of a “gray goose quill” was “all the sound we heard,” save now and then the often dolefully and long-drawn exclamation of: “Master, please to mend my pen.”

In brief, the plummet has gone, and is almost forgotten. The crude lead pencil has been fashioned into comely, graceful shapes of graphite, at once useful and ornamental, easy to handle, convenient to carry, often poised on the ear, where it should never be found; serviceable to the household, counting room, restaurant, school room, and domestic and social as well as business life; the studio of the artist, the workshop of the mechanic, and indoors and out, everywhere. With the pencil we make memoranda of what we are to do, and records of what we have done; with it we write our orders for the marketmen, and keep the run of things in the home life; note down headings for sermons, speeches, addresses and “talks”; put on paper suggestions, reminders, conclusions and data of the times, of when and where we came into the world, what we do while we are in the world, and make mention of what we are intending to leave behind when we go out of the world. So on, and so on. These are some of the things we do with pencils, and after a recital of this bit of history the inquiry comes without effort—“What should we do without the pencil?” If any wiseacre is wise enough to inform us will he, or she, please rise and “communicate.”

ESTABLISHED 1827.

INCORPORATED 1868.



JOSEPH DIXON CRUCIBLE CO.

JERSEY CITY, N. J., U. S. A.

SALESROOMS AT

68 Reade St., New-York. 38 North 4th St., Philadelphia.
304 Market St., San Francisco. 28 Victoria St., London.

RESIDENT REPRESENTATIVES:

BOSTON. CHICAGO. ST. LOUIS. PITTSBURGH.
PARIS. HAMBURG. VIENNA.

GRAPHITE MINES AND MILLS AT TICONDEROGA, N. Y.
CEDAR MILLS AT CRYSTAL RIVER, FLA.

OFFICERS:

E. F. C. YOUNG, JOHN A. WALKER, GEO. E. LONG,
President *Vice-Pres. and Tress.* *Secretary*.

SELECTING GRAPHITE FOR LUBRICATING.

It is very desirable, in giving orders for any kind of mechanical goods, to specify what is wanted as definitely as possible. Sometimes—indeed, very often—the buyer who knows exactly what he wants the article to do is in doubt just what to select. This is a common circumstance in ordering a lubricant. If the seller is reliable (and there are but few John Finks in the trade), he will help the buyer to select the correct article for the purpose. Probably there are more blunders made in ordering graphite for lubricating purposes than in selecting oil. There seems to be but a limited public knowledge of graphite, which is also known as plumbago and black lead, the same substance being called these three names.

In a recent conversation with General Manager Walker, of the Dixon Crucible Company, he said: "I was in an engine-room the other day, and asked the engineer whether he used graphite as a lubricant. He answered, 'No, he used black lead.' 'What is graphite?' he continued. The fact is, graphite (or plumbago or black lead) is useful for scores of different purposes, and is scientifically prepared by this company for each special use. For one, it must be absolutely pure; for another, purity is a non-essential. For a third, it must be reduced to an impalpable powder; but for number four it is needed in a coarse flake. One-third of our orders, however, simply say—send us so many pounds of black-lead, leaving the company to speculate as to what is wanted. The superintendent or master mechanic of a large plant learns in a general way of its value; he decides to try it. Without stopping to learn whether the miners and manufacturers may or not have prepared a special grade for different purposes, he sends usually to the nearest mill

supply store for some "black lead." He gets it. Six cases out of ten, it is not what he should use. It has been bought by the mill supply firm in ignorance of the scope of the article, and chiefly on account of its price. The result can be predicted. The trial is unsatisfactory. The particular black lead which caused the failure is not condemned, but the principle of lubricating by the use of graphite has received a set-back. Nevertheless, the graphite industry is a growing one; its position as a lubricant is assured. It will be the solid anti-friction agent of the future."

(*American Machinist.*)

STUMP PENCILS ARE MASCOTS.

"Talking of hoodoos and mascots," said a member of the stock exchange, "the boys on the floor of the exchange are as suspicious as a lot of sailors. If you don't believe it you look at the lead pencils they are using the next time you are in the building."

"You won't find a man using a long lead pencil. Why? Because a long pencil is a hoodoo of the worst kind. They always cut a new pencil in half before they sharpen it. Some of these pencils acquire the reputation of being lucky."

"Less than a week ago I came down without my pencil, which, by the way, is a lucky one—every memorandum made with that pencil results in a profit for me—and I borrowed one from a friend on the floor. He handed me a stump about an inch long, and said: 'You can use that; it's a lucky pencil.'

"Sure enough, I made two deals in the morning, and each netted me a handsome profit."

"I was about to make a memorandum of some stock I had bought, when my friend approached me and said:

"Here, take this pencil and let me have mine again. I've lost on every deal since I loaned it to you."

"Sure enough, I lost on that deal and the luck went back to the owner of the pencil."

"When you get hold of a lucky pencil you want to hang to it."

"Some of the boys have little lucky pencils not more than an inch long, and they guard them as they would their lives."

"If you, through carelessness or accident, cause them to break the lead point they lose whatever regard they have for you and forever afterward regard you as inimical. Some of them wouldn't take \$5 for a little piece of pencil worth considerably less than a cent."

(*New York Press.*)

JOHN BILLING'S DEFINITION OF "A SQUARE MAN."

The square man measures the same each way and haint got any winny edges nor cheap lumber in him. He is free from knots and sap and won't warp. He iz klear stuff, and I don't care what you work him up into he won't swell and he won't shrink. He iz amongst men what good kiln-dried boards are amongst carpenters; he won't season-crack. It doesn't make any difference which side ov him yu come up to, he iz the same bigness each way, and the only way to get at him ennyhow, iz to face him. He knows he iz square, and he never spends any time trying to prove it.

MORE LIGHT WANTED.

"Gentle Reader!"—so Washington Irving always began—have pity on the poor fellow in the Dixon office who gets your kind letter or postal, saying: "Please quote best figures on plumbago."

You should see him scratch his head when these are laid on his desk.

It's like a doctor being told: "I'm sick, please cure me."

There are a hundred kinds of plumbago, prepared in a hundred different ways, for a hundred different uses, hence if you, gentle reader, dictate such a letter or such a postal, please add, for what purpose it is to be used. Plumbago for lubricating will ruin a sand mould prepared for castings, and plumbago for facings would not be thought of for lubricating. If you wish to manufacture it into stove polish, still another kind is wanted. "A word to the wise," etc. etc.

GRAPHITE FOR TEA AND COFFEE.

Some years ago we sold quite a quantity of graphite to a large tea and coffee firm for polishing tea and coffee. The tea and coffee had met with some mishap, probably dampness, whereby the polish or luster of the tea leaf and coffee berry had been destroyed, and it was suggested that the luster might be restored by the use of graphite. It was tried and the operation was in every way successful. As graphite is a form of carbon, pure and sweet and healthful as charcoal, nothing better could have been used for the purpose.

We are reminded of the above by a letter just received from one of our salesmen in South America, who writes: "This firm is probably the largest dealer in graphite goods in Brazil, and what may seem strange to you is that they use black lead (graphite) for polishing coffee."

A LIVELY AND VIGOROUS OLD COMPANY.

We are indebted to A. Ashmun Kelly, editor and publisher THE MASTER PAINTER, for the following complimentary notice. Whatever brother Kelly does, he does in a neat and taking way, whether it is discussing the subject of paints and pigments, writing editorials and notices, or forecasting the future of his sixteen months' old baby, Arthur Pierson Kelly.

The Dixon Crucible Company have begun the publication of a bright four-page monthly, which is issued gratis, and has for its mission the "establishing of a better understanding in regard to the different forms of graphite and their respective uses." Although very extensive advertisers in established periodicals, it being rare that we pick up a monthly, weekly or daily that doesn't contain their ad., yet the limits of such mediums do not admit of any full account of graphite's interesting story, and the thousand uses it is being put to, and hence the issuing of their own journal seems to have been imperative. This because there is a great deal of misleading information about graphite, by which people are led to suppose that all that goes by that name is really graphite, whereas it may be "black lead," the commercial term for the material that comes from Germany, Bulgaria, Mexico, etc.; and which has but few uses as compared with the true graphite, such as the Dixon people, for

instance, mine and prepare, or a native schist, which is not graphite at all, but which is ground into paint and sold as "graphite paint."

It rarely occurs that a firm with an established fame and success retains original vim and vigor at the end of seventy years' pushing with the zest that was felt at the start. Yet we find the Joseph Dixon Crucible Co. to-day as enthusiastic over the possibilities and the achievements of graphite as at any prior period of their history, and we believe them when they say that "at no time, especially since the incorporation of the Dixon Company in 1868, has our enterprise, our work or our enthusiasm been permitted to lag."

The Company was established in 1827 by Joseph Dixon. As long ago as 1832 Mr. Dixon had won a medal for his products, and since then the Company have won ninety-four "first medals."

PERCENTAGE is a stumbling block to many. Some time ago a young man said: "It seems to me only common sense that if you can add 100 per cent to a price, you can take off 100 per cent, and have the price the same as when you started." The following is from THE ENGINEER, and we print it because of the terseness and correctness of the answer.

J. T. T., Saginaw, Mich., writes: "An agent for a patent oil cup claims that if I adopt his cup, it is possible to save 100 per cent of oil. Please explain how this can be done." A.—By using a cup that does not feed at all.

*

A SHORT time ago, when making a shipment of Dixon's stove polish abroad, we were obliged to appear before the officials of the Wilson Line and make statement of the ingredients used. This was made necessary because of the many dangerous stove polishes now in the market. In fact, so dangerously explosive are most stove polishes considered, that they are excluded from shipments.

*

WE have all laughed at the remark of the Irishman who said it was not the fall that hurt him, but the sudden stopping. When we laughed it showed our ignorance of scientific language.

A scientific writer in the "AMERICAN MACHINIST" says: "The wreckage of a railroad train is due to the stopping of the velocity, and the more abrupt the stopping the greater the damage."

*

A FEW cents invested in a stick of Dixon's solid belt dressing will pay a good dividend in better running belts and a saving of power. Dixon's Solid Belt Dressing is convenient to handle, prevents slipping of belts and does no harm to the leather. A sample size will be sent free of charge.

*

OBTAIN good things by paying their worth. Good lead pencils cannot be made of poor materials, but a pencil that may not be considered good by you may be just right for some one else, as different paper and different hands require different pencils. It is for that reason that the Dixon Company make over 700 different styles of pencils and 15 different degrees of hardness of leads.

CHANGE IN MANAGERS.

The new year brings an important change in the New York management of the Joseph Dixon Crucible Company, the well-known lead pencil manufacturers.

A. J. C. Foye, who has had charge of the office of the Dixon Company for the past eighteen years, retires, and his successor, John M. Ready, is one well-known to the trade, both East and West.



JOHN M. READY.

Mr. Ready, whose well-known face will be recognized in the illustration, comes to the metropolis with good wishes from everybody. He is a native of Ohio, his father being the late Hon. Armstead T. Ready of New Philadelphia, Ohio. Mr. Ready joined the staff of the Dixon company in 1885, and is perhaps the best known pencil salesman in the United States. During the past two years he has been the Chicago representative of the Dixon Company, and before that had a territory from Pittsburgh to Denver.

When Mr. Ready's friends learned of his appointment to the New York office a multitude of letters of congratulations and good wishes tumbled in upon him, and he asks us in this way to thank all of his many friends for their good wishes, and he sincerely hopes that whenever they come to New York they will call on him at the Company's office, No. 68 Reade street, where he will do his best to make them thoroughly at home.

Mr. Ready's equipment for the Dixon Company's New York office management is a full understanding of the company's business in other lines as well as in pencils, and fifteen consecutive years with the Dixon Company, a highly creditable record of promotion and an almost national acquaintance with buyers of the Dixon products. *The STATIONER* welcomes him to New York, and wishes him a big success in his new field. (*The American Stationer*.)

DURABILITY OF GRAPHITE PAINT.

Wm. Hooper, of Ticonderoga, N. Y., has written an article on preserving paint, calling attention to the durability of paint in whose composition finely ground graphite is an ingredient. In speaking of the efficacy of graphite paint, he says:

"I had a large iron casting which laid in my mill yard for over thirty years. It was painted with only one coat. The old casting

was broken up and sold for old iron last month, and I noticed that the paint on the pieces of casting, even after being broken up, looked quite fresh.

"If the surface to be painted is perfectly dry when the finely ground graphite is applied, the paint will prove the most lasting paint known, because if time eliminates all of the oil, the graphite seems to adhere to the surface painted just the same as a piece of paper or wood will appear after it has been rubbed with a lead pencil or a piece of graphite. No other pigment known to me will remain on the surface painted after the oil has been thoroughly destroyed. With the experience I have had with graphite paint, I thoroughly believe that if any dry surface be covered with graphite paint and left untouched for a period of thirty years—by which time the oil will have disappeared—no doubt a letter could be written plainly on the surface by using a piece of large wire or nail after smoothing the end of the wire or nail which is to be used as a pencil. I have done all this and shown it up to others. Writing with the piece of wire, polishes the graphite which adheres to the surface, showing that it is there still.

(*American Artisan*.)

THE GOLDEN VERSES OF PYTHAGORAS.

Let not soft slumber close thine eyes
Before thou recollectest thrice
The train of actions through the day:
Where have my feet found out the way?
What have I learned wher'er I've been?
From all I've heard, from all I've seen?
What know I more that's worth the knowing?
What have I done that's worth the doing?
What have I sought that I should shun?
What duties have I left undone,
Or into what new follies run?
These self-inquiries are the road
That leads to virtue and to God.

"I WANT to get something to put in a hole that will keep wood from squeaking when it turns round." So wrote a piano-case manufacturer to us some time ago. We sent him a sample of Dixon's No. 635, and it did the work.

Dixon's No. 635 is a very choice graphite, ground to an impalpable powder. It mixes readily with any oil, grease, or other vehicle, or it can be used dry.

For lubricating specially small or close fitting bearings it is without an equal in our whole range of lubricating graphites.

It is recommended for cylinders of gas engines, as it is not affected by any degree of heat. It forms a veneer-like coating on the inside of the cylinders, and polishes the piston as well. It is well-known that all oils fail to perfectly lubricate the cylinders of gas engines, because of the high heat which approaches fully 2000 degrees Fahrenheit.

Dixon's No. 635, mixed with a very little oil, or rubbed dry on the slide of desk or bureau drawers, prevents squeaking and makes the drawers run easily.

Dixon's No. 635, mixed with vaseline, makes a most desirable lubricant for bicycle bearings and chains.

Dixon's No. 635 is used by engineers for lubricating the delicate parts of air brakes, and by experts for lubricating and polishing the steel parts of scientific apparatus. It prevents rusting and lubricates perfectly.

There seems to be no end of its usefulness.

*
PEOPLE who strongly desire a thing are nearly always well served by chance.

Graphite

ASTOR, LENOX AND
TILDEN FOUNDATION

VOL. I.

MARCH, 1899.

No. 4.

Issued in the interest of Dixon's Graphite Productions, and for the purpose of establishing a better understanding in regard to the different forms of Graphite and their respective uses.

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HOW A LEAD PENCIL IS MADE.

It is impossible to attempt in a brief article to tell of all the processes of lead pencil making. We have, however, a little pamphlet entitled, "The History of a Lead Pencil," which we shall be glad to send to anyone who may be interested.

In the making of a lead pencil, the graphite is first reduced to an impalpable powder by grinding. Water is then added, and the substance is run through mixers in a fluid state, in order to combine with it whatever quantity of clay may be necessary to give it the grade of hardness desired. The more clay, the harder the lead, and *vice versa*. After this mixing has been done, which is performed entirely by machinery, the mass is taken from the mixers and run through filterpresses in a way to exclude the water and reduce it to a doughy consistency.

In order to make the mixing still more thorough, this doughy mass is then passed through dies (by which is meant plates with numerous small perforations) under great pressure, from which the lead—as it is called in deference to common phraseology—issues in tiny threads or wires, in general appearance not unlike the lead that is put into the pencil, but instead of being dry and brittle, being still in a moist or soft condition. The material receives this treatment repeatedly through dies with apertures of different diameters, until finally, when the mixing has been satisfactorily completed, and the mass is in proper condition, it is passed through a set of dies of the exact diameter of the lead that is to go into the pencil. Deft fingers take the product in this condition, straighten out the leads, and cut them to lengths of about three feet. At this stage it is still comparatively soft and pliable. After being cut the leads are allowed to dry, and are then cut to the required pencil lengths and packed in crucibles and burned for several hours, in order to extract the last degree of moisture that remains, and to bring the lead to its final condition. The lead is now ready for inserting in the wooden case.

The companion product for these graphite pencils, as fashioned and formed for business purposes, is cedar wood, from which the wooden cases are largely made. The source of this supply is Florida, and the extinction of the supply of black walnut woods is being repeated in the rapid wast-

ing away of the once supposed to be inexhaustible supply of cedar wood. So pronounced is this condition of affairs fast becoming, that some other source of supply will be found necessary at an early day.

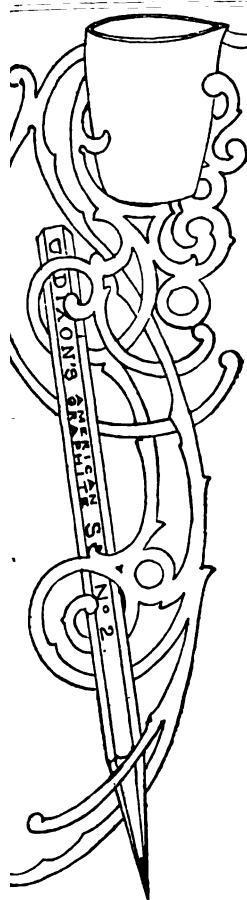
But as in the case of the destruction of the whale and of the complete abandonment of the whaling fields, when Pennsylvania first poured its oceans of oil out of the earth, so will some other material be found for the pencil wood, when the present source of supply has become exhausted.

The cedar is shipped from Florida in small blocks or slabs, a little longer than a pencil in length, a little wider than four or six pencils in width, and of proper thickness. Notwithstanding the fact that it is carefully assorted where milled out, the first treatment it receives when it reaches the Dixon pencil factory is careful selection as to grade; and then follows the dyeing process, in case the wood is to be colored for certain grades of pencils, and the treatment which takes out the essential oil, and last, but not least, the process which seasons it perfectly.

If the reader will examine his pencil critically, he will find that the cedar case consists of two halves, each equally channeled and with the line of junction coming against the center of the lead. About the first thing done in the manufacture of the cedar case of a pencil is to get the lead in place. After this the shaping and finishing are attended to. Little slabs of cedar, two, four, or six pencils wide, are grooved, and the leads are laid in the grooves of one of these, and then another spread with glue is laid upon it, and the two so put together are put in a press to dry. After this cunningly devised machinery slits the slab in two, four or six pencils, as the case may be, and these individual pencils, passing through still other machines, are polished, varnished, stamped and put in cases ready for delivery to the wholesale and retail trade.

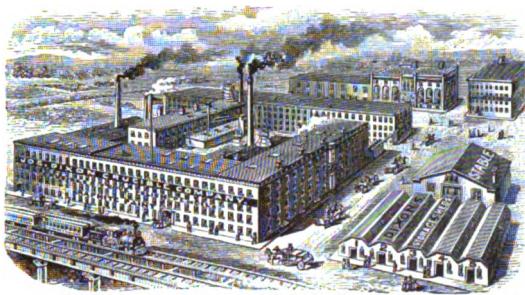
Oft and often valuable improvements are the result of no special effort or circumstances—are not "born" but, like Topsey, they "growed," and came to maturity by means of the elements they fed upon. The pencil, once a luxury, is now a necessity, and to-day it is in every man's hand and every woman's pocket—whenever her pocket can be found—and on every school teacher's and every child's school desk. Without it commercial life would be brought to a stand-still; domestic doings would be paralyzed, and social, political and religious circles and arenas would be but barren fields of human activity.

The most gratifying feature of this pencil industry is the fact that the American make is found vastly superior to the foreign or imported article. The Dixon pencils were first



ESTABLISHED 1827.

INCORPORATED 1868.



JOSEPH DIXON CRUCIBLE CO. JERSEY CITY, N. J., U. S. A.

SALESROOMS AT

68 Reade St., New-York. 38 North 4th St., Philadelphia.
304 Market St., San Francisco. 28 Victoria St., London.

RESIDENT REPRESENTATIVES:

BOSTON. CHICAGO. ST. LOUIS. PITTSBURGH.
PARIS. HAMBURG. VIENNA.

GRAPHITE MINES AND MILLS AT TICONDEROGA, N. Y.
CEDAR MILLS AT CRYSTAL RIVER, FLA.

OFFICERS:

E. F. C. YOUNG, JOHN A. WALKER, GEO. E. LONG,
President. *Vice-Pres. and Tress.* *Secretary.*

JERSEY CITY, N. J., March 1899.

introduced into our schools in 1872, and their superiority over those of other manufacturers has been remembered during all the years that these schoolday little ones have been becoming "children of a larger growth," until it is only truth to say that not only everybody uses pencils, but that everybody uses the Dixon American Graphite Pencil.

There is such a variety of these that time and space would fail to enumerate them. In brief, there is the ordinary black pencil, the red pencil, the blue pencil, the green pencil, the yellow pencil, the terra-cotta pencil, and the most dreaded of all these among literary contributors to journalism is the little blue pencil, which the editor sometimes wields so unmercifully. There are soft, medium and hard pencils, draughtsmen's pencils, architects' pencils, artists' pencils, lumber pencils, black and colored crayons, prominently listed, to which many other names might be added; all of the best quality of material and of finest make and finish.

The comprehensive finale of this story may best be told by a paraphrase of Leigh Hunt's "Abou Ben Adhem," something like this:—

"Abou Ben Adhem—may his tribe increase!—
Awoke one night from a sweet dream of peace,
And saw, within moonlight in his room,
Making it rich, and like a lily in bloom.
An angel, writing in a book of gold,
Exceeding peace had made Ben Adhem bold.
And to the Presence in the room he said,
· What writest thou, and with what kind of pen?·
The Vision raised its head, and quickly then
Replied, 'With pencil, and the very best,
And the "Dixon Graphite" leads all the rest!'"

HOMER NODS.

People who strongly desire [soul desire] a thing are nearly always well served by chance.—*Graphite*. Oh no, never by "chance." Even the movement of a fly on a molasse barrel is not by chance. A thing never happens by chance. I wonder if Mr. Long would admit that the smallest, most distant moving bit of machinery in the great works of the Joseph Dixon Crucible Co. moved by "chance."

Wade's Fibre and Fabric.

Brother Wade, unlike his usual self, has overlooked the spirit of the above and seen only the letter. Chance, like devil, is a personification of something that is rather too deep or too abstract for the average finite mind. We often use the word for convenience and for easy understanding.

Chance doesn't necessarily mean something that is haphazard. In the toss of a dice there is said to be one chance in six that the ace will come up, but who can say if it is always chance, pure and simple, or chance, meaning some law or power unknown? If the ace should turn up more frequently than any of the other sides, then we would be bound to believe that some law—physical or other, governed it, even though we might not be able to determine it.

So it is, we say, that people who strongly desire a thing are nearly always well served by chance. The purer, the stronger and the more unselfish the desire, the better do we invoke the aid of the determining law, and the fulfillment of that law we call "chance" for convenience.

Does Mr. Wade recall the Hindoo idea of luck? There is, so to speak, a debit and credit account of a man's bad deeds and good deeds. If when a man dies his good deeds have outnumbered his bad deeds, then, in his reincarnation, or new life, he will have happen him much that we know of as good luck. If, on the contrary, he has in a previous life been specially and willingly bad, then we will all know of it by his being a very "unlucky dog."

But this is another story.

THE MOON AND THE WEATHER.

Many people look for a change of weather with the change of the moon. In fact, the moon is very generally supposed to have a direct influence upon the weather, but scientific observation covering a period of twenty years completely breaks down old-time superstition about the influence of the moon, and the old rhyme is still in force—

The moon and the weather
May change together :
But change of moon
Does not change the weather.

"By my own work before the night,
Great Overseer, I make my prayer.
If there be good in that I wrought,
Thy hand compelled it, Master, Thine:
Where I have failed to meet Thy thought,
I know, through Thee, the blame is mine.

The depth and dream of my desire,
The bitter paths wherein I stray,
Thou knowest who hast made the fire,
Thou knowest who hast made the clay,
One stone the more swings in her place
In that dread temple of Thy worth—
It is enough that through Thy grace
I saw naught common in Thy earth.—

—Kipling.

SONG OF THE MOTHER.

Oh! could I find the forest
Where the pencil-trees grow,
Oh! might I see their stately stems
All standing in a row!
I'd lie me to their grateful shade,
In deep, in deepest bliss,
For then I need not hourly hear
A chorus such as this—

CHORUS.

Oh! lend me a pencil, please, mamma!
Oh! draw me some houses and trees, mamma!
Oh! make me a floppy
Great poppy to copy,
And horses that prances and gees, mamma!

The branches of the pencil tree
Are pointed, every one.
Ay! each one has a gleaming point
That glitters in the sun;
The leaves are leaves of paper white,
All fluttering in the breeze,
Ah! could I pluck one rustling bough,
I'd silence cries like these—

CHORUS.

Oh! lend me a pencil, do, mamma!
I've got mine all stuck in the glue, mamma!
Oh! make me a pretty
Big barn and a city,
And a cow and a steam engine, too, mamma!

The fruit upon the pencil-tree
Hangs ripening in the sun,
In clusters bright of pocket-knives—
Three blades to every one.
Oh! might I pluck one shining fruit,
And plant it by my door,
The pleading cries, the longing sighs,
Would trouble me no more.

CHORUS.

Oh! sharpen a pencil for me, mamma!
'Cause Johnny and Baby have three, mamma!
And this isn't fine!
And Hal sat down on mine!
So do it bee-yu-ti-ful-lee, mamma!

(From "In my Nursery.")—Laura E. Richards.

YOUR MONEY'S WORTH.

The tide is rising very fast and very high as to the use of flake graphite for lubricating. To be of any use the graphite must be pure. It cannot be made pure unless the miners spend money to make it so. Read then the following letter from a leading mill supply firm.

— — —, Feb. 2d, 1899.

Jos. DIXON CRUCIBLE CO., Jersey City, N. J.

Gentlemen:—We are sorry the trade here are not willing to pay the higher price for flake graphite.

Yours truly — — —

The question was between poor graphite, and something perfected—between gritty stock, and stock free from grit

at a trifle more cost; and the report is that the trade is not willing to pay the higher price for the perfected article—so says the dealer. Being interpreted it says: My customer, the owner of a valuable piece of machinery, costing perhaps several hundred dollars—refuses to buy perfected graphite at a cent or two a pound more than the price of the gritty.— We have too much knowledge of the American machinist, the American artisan, the American factory superintendent to believe this.

We believe the reverse is true,—that the American factory superintendent is awake to the merits of perfected graphite *versus* gritty graphite and is in many cases defeated in getting what he wants, because the dealer can make more on selling, to use a slang phrase, snide stuff.

A SKILLED WORKMAN.

OVER TWO SCORE YEARS WITH THE DIXON COMPANY.



In February, 1899, Mr. William Van Horn completed his forty-first year as a Dixon employee. He is still a vigorous and skilful workman. The vessel on which his hand rests is made of graphite and is known as a graphite retort, and is used by the big silver smelting companies in the far west. It weighs about one hundred and fifty pounds.

BUSINESS.

Our sales for 1898 were far ahead of the sales of any previous year, and so far 1899 has proved to be better than the corresponding time of any previous year.

We know that business generally is better and that times are good, but we congratulate ourselves that we are reaping now some reward of our advertising and hard work.

It was noticeable during the dull times, especially in the latter part of 1893, when business slumped generally, that the Dixon Company did not discontinue any of its advertising, or cease to push for business in all directions.

GOT TO EXPAND ONCE MORE.

Last summer the Dixon Company put up a three-story, 90 x 40 addition to its pencil plant and is now putting up another addition, 32 x 26, four stories high, and this probably will not be the end of our expanding, as we are in great need of larger facilities.

Over 700 different varieties.

Over a dozen degrees of hardness.

DIXON'S AMERICAN GRAPHITE PENCILS.



Dixon's American Graphite Pencils are equally suitable for general office use or for professional work, such as drafting, stenographic, &c.

DIXON'S Silica-Graphite PAINT



Dixon's Silica-Graphite Paint has the honor of being the pioneer graphite paint, and it is the graphite paint that made the records for durability and economy. A more carefully made paint for durability can not be produced. Theoretically it is correct, and it has been so demonstrated in practice.

JUST THE THING FOR RAILROAD SHOPS!

DIXON'S SOAPSTONE CRAYON No. 524.

Sawed out of solid soapstone, flat shape, chisel point. Nothing equals it for marking on all dark colored metals.

DIXON'S PLUMBAGO CRUCIBLES.

We use the best materials exclusively, employ the most skillful workingmen, and, guided by the experience of over seventy years, are, we believe, producing to-day

The best Crucibles in the World.

Made in all sizes and for all purposes.

We also make plumbago facings and core wash for foundry use.

DIXON'S Pure Flake LUBRICATING GRAPHITE.

The practical engineer and the scientific expert unite in saying that the addition of a small amount of Dixon's Pure Flake Lubricating Graphite largely increases the life or lubricating value of any oil or grease to which it may be added.

SAMPLES AND CIRCULAR FREE.

DIXON'S Graphite PIPE-JOINT COMPOUND.

The Master Mechanic of a prominent railroad says:

"I use Dixon's Graphite Pipe-Joint Compound for pipe-joints, steam chest studs, cylinder studs, and also for re-tapping stay-bolt holes. I am pleased with the material for the purpose named."

It is sold quite largely among the leading railroads — and is superior to red lead or white lead for all pipe work.

SAMPLES AND CIRCULARS ON REQUEST.

Graphite



VOL. I.

APRIL, 1899.

No. 5.

Issued in the interest of Dixon's Graphite Productions, and for the purpose of establishing a better understanding in regard to the different forms of Graphite and their respective uses.

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SOME POINTS WORTH NOTING.

A correspondent of *American Trade* writes to that paper from Dresden, as follows:

In sending an order to a prominent manufacturer from Wien (Vienna), I enclosed the original letter in order to show a picture of the factory and give an idea of the firm's importance. The machine was shipped directed to Wien, Germany, and I received a letter requesting me to state, in future, the name of the country. I counted on Americans knowing the German name of the fourth city in Europe and where it was. I get letters directed "Dresden, Austria," correspondents thinking that the A in "Dresden A" (meaning the Altstadt side of the river) stands for Austria.

I get freight shipped to Dresden via Liverpool, in spite of positive orders to send by Hamburg steamers.

There are now seven or eight unpaid packages for me in various express offices in Hamburg, Bremen and Dresden, probably samples—senders and contents unknown.

I recently sent back a short-paid letter from a firm unknown to me. Like Noah's dove, it "came back after many days," full paid and containing, for reply, a self-addressed envelope with a United States five-cent stamp affixed. Do Americans imagine that United States stamps are taken in the German post-office?

I get quotations f. o. b. Kalamazoo or other inland towns. They are useless. I don't know the local freight rates nor the constantly changing classifications and have neither time nor inclination to find out. From New York I can figure cost to me, if net and gross weights and size of containing packages are given.

I have just received a case containing excelsior thoroughly saturated with and hardened by the contents of a poorly stoppered can of varnish sent as a sample. Do my countrymen imagine that the steamship company and other common carriers hang such sendings in gimbals to keep them upright, or that each package has a man assigned to it, to hold it right side up in his lap all the way here?

Yours desultorily,

ROBERT GRIMSHAW.

A GOOD HINT.

In the flow of business it is more or less necessary for buyers to return certain goods, for one reason or another. Not one case in a million gets done in a business fashion. Some buyers simply reship, and say nothing; others reship and mention the fact off-hand in a letter occupied with other matters. The correct way is to reship, and send to the party who is to receive them an invoice with all the details, just as if he had bought the goods back, with price, shipping instructions, bill of lading if necessary, and ask for a credit memorandum by return post, then the whole thing would be well taken care of, the goods received back, bill checked, price checked, passed to bookkeepers for credit notice and credit memorandum. A moment or two detailed attention like this would forestall all possibility of *Mistake* and save much temper, letter writing and troublesome looking-up.

WE received the following letter from a party interested in graphite paint and take much pleasure in publishing it:

EDITOR "GRAPHITE":

Some "Dixon Graphite" records will never "down," but "bob" up serenely. Mr. J. M. Patten, General Manager of the Topeka Railway Company, informs me that some time ago he painted one hundred and eighty (180) iron centre poles on their road, in alternating sections with Bessemer Paint, Mass. Chemical Co. Enameline, pure Asphaltum and Dixon's Silica-Graphite Paint.

The extremes of temperature here in Kansas destroyed the Asphaltum and Enameline in one season. The Bessemer stood somewhat better, but for a short time only, and then gave way: while for a long time after, Dixon's Silica-Graphite Paint was as good as at the start, while in the beginning all the others had made a brighter appearance. He has since used Dixon's paint on the whole line with unvarying success and finds it the most economical metal paint in the market.

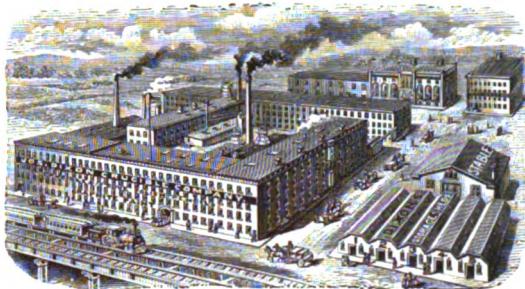
Mr. E. G. Pratt, of Capitol City Gas Light Company, Des Moines, Iowa, who is another enthusiastic "Graphiter," relates his efforts to get Dixon's Graphite Paint on the first stack in Des Moines, since which time he notes with pleasure the growth in popularity and the success of Dixon's Silica-Graphite Paint.

Your correspondent is continually coming in contact with consumers who testify to the value of this paint for durability and economy.

SAINT, THE TRAVELER.

ESTABLISHED 1827.

INCORPORATED 1868.



JOSEPH DIXON CRUCIBLE CO. JERSEY CITY, N. J., U. S. A.

SALESROOMS AT

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OFFICERS:

E. F. C. YOUNG, JOHN A. WALKER, GEO. E. LONG,
President. *Vice-Pres. and Treas.* *Secretary.*

JERSEY CITY, N. J., April 1899.

DIXON'S GRAPHITE AXLE GREASE.

Its basis is the pure, soft Ticonderoga Flake Graphite.

The grease which holds the graphite is itself an excellent lubricant, but our object has been to utilize the wonderful and enduring qualities of the graphite, and we have used the grease simply as a means of holding the graphite, and of distributing it along the bearing surfaces of the axle and box. It is far cheaper in the end, for the reason that it will outlast any other axle grease many times over. It is not affected by time or climate, heat or cold. Whenever it seems to have become stiff and dry, it can be worked into a soft paste by means of a knife in a few seconds.

It never gums, does not become hard in cold weather, or run in hot weather. Outlasts any other grease many times over, and for safety and durability stands alone. Requires only enough to coat the axle, and makes frequent greasing unnecessary.

It forms on all bearing surfaces — especially on iron, steel, and wood — an incomparable slippery glaze, which reduces friction, strain and abrasion to a minimum.

It is the only grease that livery-men can use with safety on roller or ball-bearing axles, as it is the only grease that does not rust the bearings. It keeps such bearings bright as nickel.

Axes and all bearings should be thoroughly cleaned of all gum and dirt before the graphite grease is applied. Apply it the first week sparingly, and there will gradually be formed on the axles a silver-bright surface, smoother than any metal can be made.

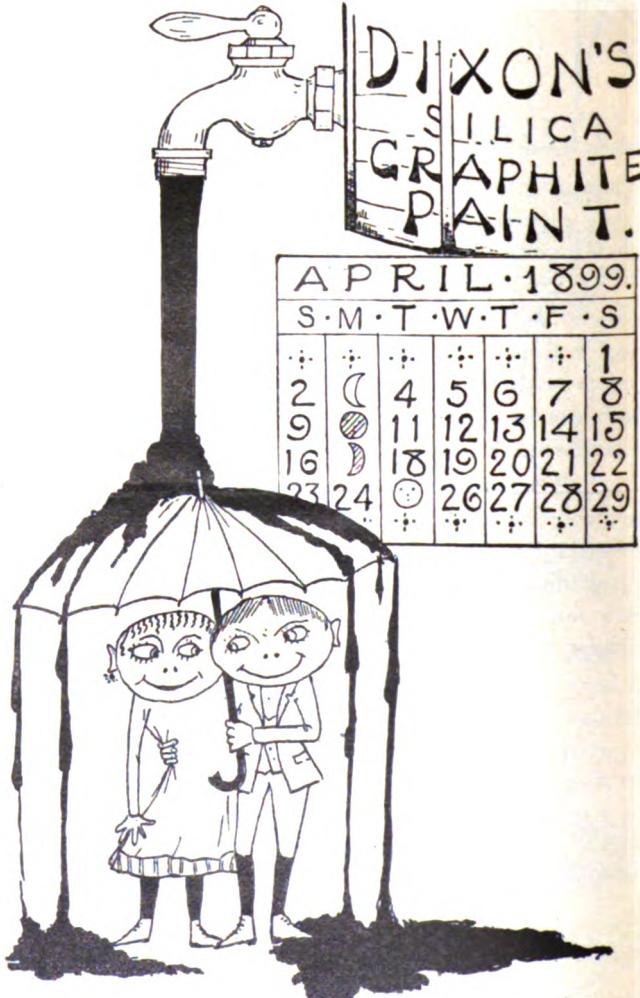
The following testimonial to its merits was received from Springfield, Mass., this month:

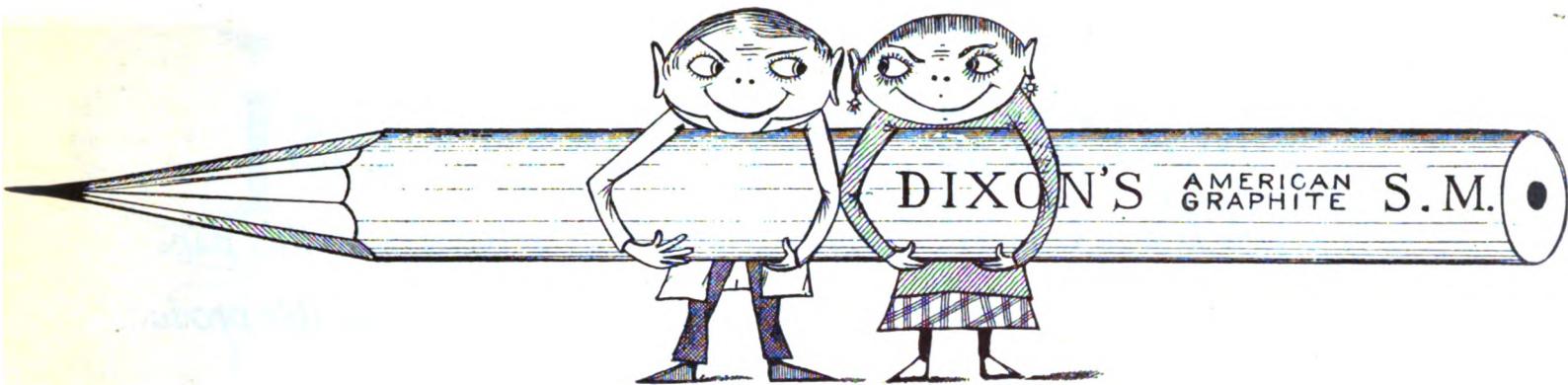
"Please send by mail a box of your Everlasting Axle Grease. I am not able to find it in this vicinity and I do not like to be without it. I run a large wagon a week here with only one application and would almost walk down there after it if I could not get it without."

ABOUT THE PAY.

Primarily we are all in the swim for money-making purposes, and after our various products are made and sold, whether we make money or not depends on getting the bills paid.

Last week we drew on three different customers—among others—and to-day the three drafts are back saying "We never pay drafts." This is a good excuse where the bill is not seriously over-due; but where, as in these three cases, the bill was seriously past its due date, and the customers had been provided with at least two statements, mentioning the bill was due, and would he kindly send check; then not complying it is hardly "business" to refuse the draft saying "We do not pay drafts." Business ethics, and good form is, that when a bill is due the seller is entitled to his money promptly, and if a statement is not answered by a check, he is entitled to issue a draft and then, whether the buyers' general practice is to pay drafts or not—this draft he should pay. No seller should be obliged to beg for an over-due account. The money is his by rights.





TWO WAYS OF DOING A GOOD THING.

It is always a good thing to pay one's debts. Sometimes said debts are small, say 40, 50, or 60 cents, and the spirit moves one to pay in postage stamps.

One way is to have them loose in the letter and half of the time when letter is opened they fly all over the floor. The better way is to put them in a little pay roll envelope, mark on outside of the little envelope what it contains, and make the mail-opener happy.

IT SEEMS almost unnecessary to dilate upon the virtues and qualities of

DIXON'S AMERICAN PENCILS,

as they are now so thoroughly well-known everywhere; having gained in popularity steadily and surely, they are now the recognized standard of the country, if not of the world.

Their story is written in the booklets issued by this company, entitled: "Pencilings," "History of a Lead Pencil," and "Teachers' Note Book," which are widely distributed and which can be obtained for the asking.

THE LEAD PENCIL is not a modern invention, as is shown by the following extract from an article by George Augustus Sala, in the *Boston Post*:

"There is a vast amount of accessible knowledge touching the history of a lead pencil. It can be proved that the ancients drew their guide lines for their engrossed parchments with pieces of lead. LeMoine again quotes a document of the year 1387, which is ruled with black lead."

Conrade Gesner, in his book on fossils printed at Zurich, in 1565, says that people had then pencils for writing which consisted of a wooden handle, with a point of lead, or, as he believed, an artificial mixture called by some stimmi Anglicanum; but one Cesalpinus, writing thirty years afterward, gave a more complete account of this mineral, which he called molybdoides, or plumbago, and which he says gave to the fingers an ash-gray tint with a plumbeous brightness, and pointed pencils were made of it for the use of painters and draughtsmen. He adds that it was called "Flanders stone" because it was brought from the Netherlands to Italy."

It remained for the Dixon Company to bring to perfection the pencil which bears the imprint **AMERICAN GRAPHITE** so that to-day no school, college, banking or business house is considered as properly equipped without this adjunct to their working tools. It keeps pace with modern improvements, lightens labor, and aids in the competition in active business

and educational life. Nothing can actually replace the lead pencil; but it must be perfect—and the Dixon is as perfect as up-to-date material, machinery and brains can make it—it is an American product in every particular.

When you use a Dixon you may be secure in the fact that nothing in the pencil line can be obtained that is superior.

HERE IS another interesting letter received this month from our Mr. JOHN A. CONDIT:

"R. Campbell, Cohoes, N. Y., told me to-day he put Dixon's Graphite Pipe Joint Compound on joints in a factory. They remained for three years, when the factory burned down. Pipes were then thrown out doors and remained there for a year. He then took them apart without any trouble."

"He says he is willing to make affidavit to the above and send it to the company if they wish it."

CHICAGO, ILL.

PUBLISHERS OF "GRAPHITE,"

Jersey City, N. J.

Gentlemen:

This morning my mother-in-law asked me whether the publishers of "GRAPHITE" had issued their last number; my wife was rather cross, and on inquiring the reason of her state of mind, she said: "I wish that "GRAPHITE" would come earlier in the month." The children are very fond of it and have such fun over the pictures. They were particularly impressed with the picture of the man standing next the big jar, as they called it, in the last issue of your valued publication. My little boy, Pietro, is very fond of jokes and he said: "Papa, when is a door not a door?" and as I was unable to solve the riddle, he gave me the answer, viz.: "When it is a-JAR" and we all laughed and had such great fun. I think this is good enough to be published in your paper.

I have forgotten whether or not I enclosed postage with my last subscription, and fearing I neglected to do so, I send you herewith a two-cent stamp.

The first thing the children said this morning when they got up was: "Papa, has "GRAPHITE" come?" and when I said "No!" they cried and refused to eat their breakfast. Of course, while this is something in my pocket, (for their gruel can go over until to-morrow morning), still I should like to see the children happy. Will you please let me know if the Ohio floods have anything to do with the lateness of the coming of "GRAPHITE"?

Yours truly-true,

SAM MAYER.

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The following list of

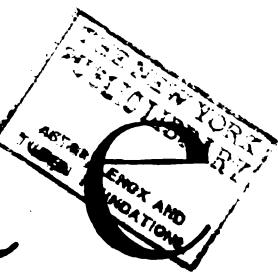
GRAPHITE PREPARATIONS

of the Joseph Dixon Crucible Company will give the readers of this paper a pretty general idea of the field of usefulness covered by this invaluable product.

Axle Grease	Hatters' Lead
Black Lead for yacht bottoms	Hot Box Grease
Bricks for furnace linings	Lubricating of every description
Brazing Graphite	Motor Carriage Lubricant
Cable Grease	Nozzles and Stoppers for Steel Melters
Car Box Grease	Piano Action
Chain and Wire Rope Grease	Pencils
Commutator Dressing	Phosphorizers
Core Wash	Pipe Joint Compound
Crucibles of all sizes for all purposes.	Powder Glazing
Cylinder Oil	Resistance Rods
Curve Grease	Roof Paint
Cycle Chain Graphites	Smoke Stack and
Chainless Wheel Lubricant	Boiler Front Paint
Electrotyping	Stove Polish
Electrical Devices	Stove Cement
Furnace Lining	Shot Polishing
File Pots	Stirrers for mixing and skimming alloys
Graphited Wood Grease for trolley bearings	Trolley Pole and Electric Light Pole Paint

Special Graphite Preparations without Number.

Graphite



VOL. I.

MAY, 1899.

No. 6.

Issued in the interest of Dixon's Graphite Productions, and for the purpose of establishing a better understanding in regard to the different forms of Graphite and their respective uses.

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WHAT GRAPHITE PAINT WILL DO.

Dixon's Silica-Graphite Paint has now been in the market for nearly forty years, and probably it is no more curious than it is with many other old-time things how few people, comparatively speaking, fully recognize the virtues of this wonderful paint, though tons and tons of it are sold to large corporations, such as railroad companies, gas companies, bridge companies, etc., and large quantities are sent abroad to foreign countries.

We herewith show an illustration of the end of a boiler house, with stack and a large steel hoisting derrick.

These structures belong to the Morgan Iron Works, foot of East Ninth St., New York City. The boiler house and stack are constructed of iron or steel plates, which were painted about 28 years ago with Dixon's Silica-Graphite

Paint and have not been repainted since. Most of the paint is in perfect condition and looks as if but recently painted. On one side of the boiler house the paint is worn away by the ashes and coal which have been piled against it, but no portion shows any sign of rust.

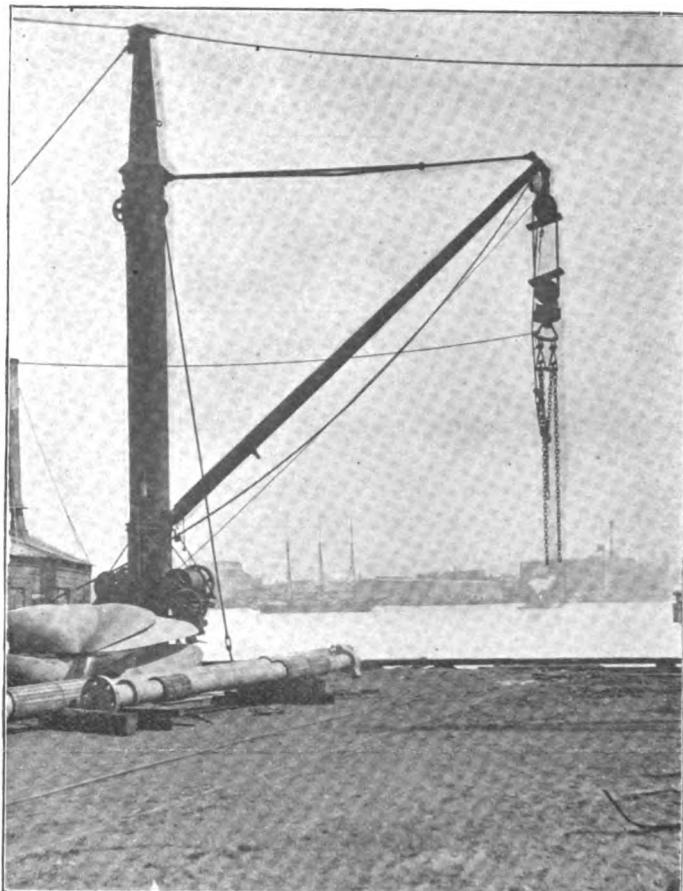
The steel hoisting derrick was first painted about 1876 and repainted about sixteen years ago and is now in good condition.

Dixon's Silica-Graphite Paint is the most economical paint for the very excellent reason that it is the paint which has put off the necessity for repainting the longest time. All users of paint should bear in mind that the cost of labor in painting and repainting is several times the cost of the material. Therefore, in the nature of things the best and most economical paint must be the paint that will last the longest.

Dixon's Silica-Graphite Paint will cover two to four times more surface than any of the lead paints, and it lasts four to five times longer than any other paint that we know of. It is easier to apply than any other paint; it wears brushes less than any other paint; it has no bad odor and will not taint water. It contains absolutely nothing that is poisonous and therefore it is the best paint for roofs that shed water for cooking or drinking purposes.

Silica-Graphite is as pure, sweet and healthful as charcoal. It covers more surface than any other paint because

it has twice the bulk of mineral paints and three to four times the bulk of any of the lead paints; it therefore covers just so much more surface. It is applied the same as any other linseed oil paint. In fact, it is a pure linseed oil paint, as we use only fire-boiled linseed oil of the best quality obtainable. Graphite paint never fades and it is



equally useful for wood or metal. For durability, for economy and for beauty of finish, Dixon's Silica Graphite Paint stands without a rival.

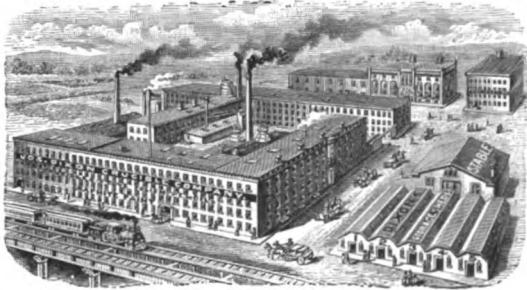
The spring and fall are exceptionally good times for painting or repainting, as the oil has a good chance to thoroughly dry and form into the semi-solid condition so necessary for durability.

"What appears to be the matter with your father?" inquired the doctor, as he hastily put his clothes on.

"He's got the plumbago," replied the boy. "I think that's what maw says it is."

ESTABLISHED 1827.

INCORPORATED 1868.



JOSEPH DIXON CRUCIBLE CO.

JERSEY CITY, N. J., U. S. A.

SALESROOMS AT

68 Reade St., New-York. 38 North 4th St., Philadelphia.
304 Market St., San Francisco. 28 Victoria St., London.

RESIDENT REPRESENTATIVES:

BOSTON. CHICAGO. ST. LOUIS. PITTSBURGH.
PARIS. HAMBURG. VIENNA.

GRAPHITE MINES AND MILLS AT TICONDEROGA, N. Y.
CEDAR MILLS AT CRYSTAL RIVER, FLA.

OFFICERS:

E. F. C. YOUNG, JOHN A. WALKER, GEO. E. LONG,
President. *Vice-Pres. and Treas.* *Secretary.*

JERSEY CITY, N. J., May 1899.

GRAPHOLITES.

Use Dixon's Cycle Chain Graphites on your wheel. The stick graphites are very convenient, but the ideal is Dixon's Graphitoleo, which is a soft paste put up in collapsible tubes. This preparation not only lubricates the chain and sprockets, but also thoroughly lubricates the pivots or pins holding the links of the chain. Graphitoleo is also useful for lubricating the bearings of a bicycle or for any other bearings or parts of a machine. Put it on the screw of your office chair or copying press.

Have you any drawer in desk or bureau that pulls out hard or squeaks? Then use Dixon's finely powdered graphite No. 635, or rub the bearing with a soft Dixon American Graphite pencil.

When putting on gas tips, or nuts on bolts, or when putting together any steam, gas, or water pipe, use Dixon's Graphite Pipe Joint Compound. It is infinitely superior to red lead or white lead in efficiency and economy. We mentioned a case in April *Graphite* where the pipes in a factory were put together with Dixon's Graphite Pipe Joint Compound. Three years after the work was done the factory burned down and the bare pipes were exposed to the weather for a year before they were taken apart. Then to the astonishment of the owner the pipes were taken apart without any trouble, as the joints were free from rust.

Don't forget when doing your spring painting that roofs properly painted with Dixon's Silica-Graphite Paint have

not required repainting for ten to fifteen years, and even longer. Read our article in this number on "What Graphite Paint will do."

If you have charge of any machinery, remember that a slipping belt means a loss of power. Dixon's Traction Belt Dressing in paste form preserves the life and elasticity of a belt and also prevents slipping. For the convenience of those who haven't time to apply a paste or soft dressing we make a solid belt dressing. We do not recommend it as heartily as we do the soft dressing, but we nevertheless recommend it to those who prefer a solid dressing.

If your lead pencil does not quite suit you, may be you haven't chosen the one best adapted to your work or the paper. Dixon's make over seven hundred different kinds. There are over a dozen different degrees of hardness, and there are the waxed leads for those who like a specially smooth lead, and there are the unwaxed leads for those who like a lead that "bites" or takes hold of the paper. In the large run the unwaxed lead is the less tiresome to use. The unwaxed leads are preferred by stenographers and others who have long sittings and steady work.

1899 A GOOD YEAR.

"THE WHEEL" of New York says: "An old song preserved in the Harleian manuscripts, in the British Museum, asserts that it is peculiarly lucky when Christmas falls on a Sunday. 'That wynter shall be good,' it says; 'the somer shall be faire and drye,' and the year that follows Christmas will be a 'good tyme all thyngs to don.' If there is any virtue in the old superstition, 1899 should be a cheerful twelvemonth." We expect that it will be and we are going to do our best to make it so.

POISONOUS LEAD PENCILS.

We occasionally read in the newspapers of death caused by putting a lead pencil into the mouth or by blood poisoning caused by the puncture of a lead pencil. Usually the newspaper men attribute death to lead poisoning, whereas it is a matter of fact that lead pencils contain nothing in the shape of mineral lead. The word "lead" is a misnomer due to ignorance of the nature of graphite when graphite and its use as a marking material were discovered several hundred years ago.

A few weeks ago the newspapers contained notice of the death of Robert N. Benedict, aged 17, one of the best known young men of Wilton, Conn. The notice added that death was the result of blood poisoning caused, according to the physician, by frequently putting a lead pencil into his mouth. Where death is caused under such conditions or by puncture, it is due to the fact that the pencil is one of those known as copying pencils. Such pencils are made of aniline coloring matter, which is a poisonous substance.

A WORD OF WARNING.

Your winter flannels don't you doff
Until it's nearly June,
For lots of folks are taken off
By taking off too soon.

L. A. W. Bulletin.

DIAMONDS, CARBON, GRAPHITE.

With the single exception of the yellow metal—gold—there is probably nothing in nature around which human interest centers itself more strongly than around diamonds. The scientist, however, in spite of the fact that specimens to operate upon cost \$25 per grain, regards the sparkling crystals of carbon with critical eyes, and in his laboratory, in the cause of science, he experiments with these brilliant objects with just as much interest as if they were so many crystals of common salt, sulphur or alum. No one would suppose, judging from their outward appearance or physical properties, that a lump of charcoal, a piece of graphite and a diamond had any relation to each other, and yet it has been proved beyond dispute that their chemical constitution is identical. They are simply three distinct modifications of the non-metallic element, carbon. To prove this relationship many queer experiments have been made with these valuable crystals. They have been burnt both in the air and in oxygen gas, the resulting carbonic acid gas being carefully collected and weighed. The favorite experiment for proving the constitution of the diamond is to place a weighted quantity in a small platinum saucer, which is inserted in the porcelain tube of a specially constructed miniature furnace. The tube is heated strongly, and a stream of oxygen gas allowed to pass through it, the products of the combustion of the diamond being collected in bulbs of caustic potash. The diamond disappears, but the potash bulbs increase correspondingly in weight by the absorption of the resulting carbonic acid.

—*Ohio Valley Mfr.*

SOME OF OUR WOES.

NO LIFE and no business is so fortunate that it is free from difficulties and perplexities. We have ours. Sometimes we find there has been some slip in office or factory, in workmanship, understanding or in shipping. Sometimes we find the fault is not ours. At all times we try to be our own most prompt and severe critic.

In the matter of raw material we buy only the best. As we make no second quality or grade in Dixon's Silica-Graphite Paint, Dixon's Plumbeo Crucibles, and our other leading products, there is no opening for any employee to make an error in the selection of materials.

Nevertheless errors will occasionally creep in and we shall be glad to be checked up by any customer not fully pleased.

A PRICELESS POSSESSION.

Credit is the most precious possession a business man can have. It is acquired, maintained and preserved by certain qualities that I believe are inherent in man. Credit is like a delicate piece of porcelain. You may break it and put it together again, and for purposes of utility it may possibly be just as good as it ever was, but the cracks are there, and you can see where it was broken. And so it is with the man whose credit is once impaired. He may be able to buy goods again, his standing among mercantile houses may be very fair, but it can never be restored to the superb condition in which it once was. And so I would warn all merchants, young and old, to regard credit as a priceless possession. Do not let it be trifled with, and allow nothing to impair it or injure it.—*Dean.*

BRUDDER SHINDIG'S DISCOVERY.

The well-known Lime Kiln Club some time ago saw fit to make the matter of stove polish the subject of a special investigation by the Stove Committee. The following is the report:

"Dis club hab ebry reason to be proud ob de Stove Committee. We has tried all de odder stove polishes, we has been stunk out wid so-called preperashuns, and seen de piping rust to pieces, till de stove-pipe was a tumbled down disgrace to de good name ob de Lime Kiln Club. De honah ob dis oecashun belongs to Brudder Shindig, who hab made a name fo' hisself by introducing Dixon's Stove Polish, and hab covered hisself wid shine and glory. Stand up, Brudder Shinig, and let us gaze upon your countenance. Now, my frens, let us draw a lesson from dis: Seek and find out fo' you'selves, and when youse got a good ting stick to it, so dat, like Dixon's Stove Polish, you may not only be a use to de community in which you libes, but also a shining example fo' de rest ob mankind.

"De Club owes a vote ob tanks to de Stove Committee, an' to Brudder Shindig in particular, an' extend de heartfelt tanks ob de Lime Kiln Club to Dixon's fo' de valuable addition to de confits ob dis life through deir Carburet ob Iron Stove Polish; wid one drawback, Brudder Shindig,—you oter hab found dis out befo'—fo' de Dixon Stove Polish hab been in de market since 1827."

THE COMMITTEE:

1. BRO. GARDNER.
2. OLD MAN JENKINS.
3. BRO. SHINDIG.
4. STEPBACK SMITH.
5. GIVE-A-DAM JONES.
6. SUNDOWN DAVIS.
7. ACCORDINGLY DAVIS.
8. STEPOFF JOHNSON.
9. TRUSTEE PULLBACK.
10. SICKLES SMITH.
11. SIR ISAAC WALPOLE.
12. LAYBACK JONES.

KIPLING sent Captain Robley D. Evans, of the Iowa, a set of his works, and with them these verses :

Zogbaum draws with a pencil,
And I do things with a pen.
But you sit up in a conning tower.
Bossing eight hundred men.

Zogbaum takes care of his business
And I take care of mine ;
But you take care of ten thousand tons,
Sky-hooting through the brine.

Zogbaum can handle his shadows,
And I can handle my style ;
But you can handle a ten-inch gun
To carry seven mile.

To him that hath shall be given,
And that's why these books are sent
To the man who has lived more stories
Than Zogbaum or I could invent.

—*Chicago Times-Herald.*

American Indian (to Filipino) — Be good, or you will be dead! —*Judge.*

Graphite

VOL. I.

JUNE, 1899.

No. 7.

• Issued in the interest of Dixon's Graphite Productions, and for the purpose of establishing a better understanding in regard to the different forms of Graphite and their respective uses.

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LUBRICATION OF GAS ENGINE CYLINDERS.

It is claimed by good authorities, and the statement is very likely correct, that the temperature attained by gas exploded in the cylinder of a gas engine is from 2000 to 3000 degrees F., depending mainly upon the compression experienced by the gas before the explosion. It is because of such high heat that satisfactory lubrication of gas engine cylinders has been impossible where oils alone have been used. Properly prepared flake graphite has successfully solved the problem, as shown by the following letter from an official of the Pennsylvania Railroad Company:

"I had a gas engine at Sharon, Pa., running a pump, and the man that had charge of it allowed the lubricator to run dry and cut the piston, piston rings and cylinder. The makers of the gas engine said the cylinder would have to be sent to the shop and bored out and a new piston put in. It was our busy season, and we could not do without water. I had some of Dixon's finely pulverized graphite, and I commenced to feed it into the cylinder through the suction pipe with the air and gas, with immediate relief. After about two weeks the engine was running smoother and using less gas than ever before.

"I had this same engine apart last Saturday, and every place that was cut is smooth as glass. This one instance saved us about \$75.00. I have great faith in Dixon's Graphite, and always keep it on hand."

An engineer of a locomotive writes: "I have been using Dixon's No. 635 in air pump and it works to perfection."

An engineer of a factory writes us: "I had some trouble with the graphite getting onto the firing pin and preventing ignition, but the lubrication of my gas engine is much improved."

A prominent firm of tube manufacturers wrote as follows: "Please send us soon as possible a five-pound can of Dixon's No. 635 Flake Graphite. We have given this graphite a thorough trial and have found it very satisfactory. We have used it in our gas engine and find it saves us about 70 per cent. of oil."

The assistant master mechanic of a railroad reported as follows: "Answering yours concerning the use of Dixon's No. 635 Graphite: In connection with oil used in cylinder, the graphite seemed to overcome expansion of packing rings, keeping cylinder from getting so hot as to stick piston (one of our troubles) and giving us use of oil instead of burning it as before. It gave us good service."

A firm manufacturing engines and boilers has this to say: "We have been using Dixon's No. 635 Graphite in the cylinder of our small engine for the time that we have had it, and while it is very good, we find that it works better with some cylinder oil, as it appears that the oil helps to retain it in the cylinder."

The engineer of a chair seat company expresses his satisfaction as follows: "I have given Dixon's No. 635 Graphite a good trial in my engine cylinder and found that it gave immediate relief to a very annoying clatter that cylinder oil alone would not touch. I also find it a superior article for the screw on the 100-ton press which we use in the embossing of our seats."

A furniture manufacturer says: "Dixon's No. 635 Graphite is used on the gas engine in our building and seems to give good results, as the lubrication appears to be perfect."

The above experiences show that Dixon's No. 635 Graphite is useful in many ways and in many places. We are of the opinion that the best results will probably be obtained by mixing Dixon's No. 635 Graphite with good oil, as the oil will help to retain it in the cylinders of engines and also help to carry it to all parts of the cylinders or bearings.

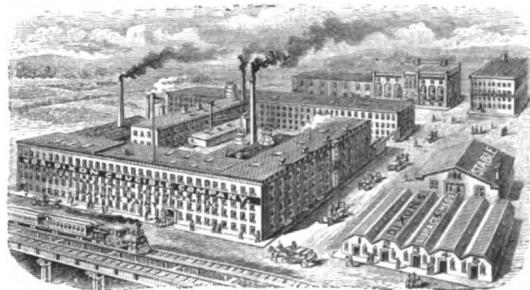
We recommend it for cylinders of all kinds of engines, and for gas engine cylinders it is absolutely indispensable if best results are to be obtained. We also recommend it for all bearing parts of small motors, for air brakes, cylinders and pistons, and for all valve seats, screws of presses, etc. In fact, we recommend it for all use where friction is to be overcome, and it is well to bear in mind that if 5% or 10% of Dixon's No. 635 is added to any oil or grease, the efficiency of that oil or grease will be very largely increased. There is nothing in the market that equals it in the way of a pure, finely pulverized graphite.

WHAT IS LIFE?

A dainty kiss, a little hug,
To the parson's then skedaddle;
For food and raiment then to tug,
Then o'er the Styx to paddle.

ESTABLISHED 1827.

INCORPORATED 1868.



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President. *Vice-Pres. and Treas.* *Secretary.*

JERSEY CITY, N. J., June 1899.

COAL—CARBON—GRAPHITE.

"Coal moves the world. The spirit of progress comes from it; railroads, steamboats, borrow from it their wonderful strength. Every machine that is, and works, has its existence from coal. It makes the earth habitable; it gives to the great cities their mighty blaze and splendor. It is a treasure, the last gift presented by earth to extravagant man."—JOKAI.

The quotation above is taken from "ABOVE GROUND AND BELOW IN THE GEORGE'S CREEK COAL REGION." We also learn from the same publication that the most extensive deposits of bituminous coal in the world are contained in the great coal-fields of the United States. The largest field known—the Appalachian—extends from the northern part of Pennsylvania to the central part of Alabama. This enormous coal-bed has a length of over 900 miles, and a varying breadth of from 30 to 180 miles, with an area of nearly 63,000 square miles, or considerably more area than all of England.

All the old theories presuppose that coal was formed during the carboniferous era, by the deposit of masses of vegetable matter which had attained extraordinary and vigorous growth in the half-submerged watery expanses of low, marshy land, or lagoons. They suppose, also, that this enormous growth, favored by a warmer climate than ours, died down at periodical intervals into masses of rotting matter, which, gradually subsiding in the water, was eventually covered with drifting sand and earthy substances, now forming the enclosing rocks of the coal measures. To explain these coal-seams 2000 feet above sea-level, as they occur in the George's Creek region, it is necessary to substitute another theory,—viz: that the land which was

once at sea-level was raised by some violent disturbance in the bosom of old mother earth, and with it the embedded coal-seams. All fuel consists either of vegetable matter or of the products of the natural or artificial decomposition of that matter. If a piece of George's Creek coal is divided into its component parts, about 76 per cent. of the whole would be fixed carbon, 20 per cent. would consist of volatile matter, and the balance, or 4 per cent. would contain the ash and what are called the impurities of the coal. The first-named part, "fixed carbon," is one of the simple elements. The diamond, graphite, sometimes called black-lead or plumbago, and charcoal are pure carbon.

“THE HORSELESS AGE.”

The above is the title of a weekly paper published in New York, and the average man, unless he has seen a copy of the paper, has no idea of the progress in construction of motor vehicles. Electric, gas and steam motors are striving for the supremacy, with the odds—so far—apparently in favor of gas motors, although the daily papers state that a motor vehicle trust is being formed to control the manufacture of all classes of automobiles.

The Dixon Company has been called upon to help solve the problems of proper lubrication for the gears of the electric vehicles, and for the cylinders of the gas engines where the temperature is estimated to be about 2000 degrees F.

For the gears of electric motors we manufactured a special lubricant which we had thoroughly tested and which has been found exceedingly satisfactory, not only in this country but also in France, where the manufacture and use of motor carriages has been very extensive.

For the lubrication of cylinders of motor engines we offered Dixon's No. 635 graphite,—a pure flake graphite ground to an impalpable degree of fineness. This graphite, untouched by any degree of heat, successfully withstands the high degree of heat which completely charred the oil and made it worthless. The graphite adheres to the inner surface of the cylinder, making a veneer-like coating of unapproachable smoothness. In another column, under the heading "Lubrication of Gas Engine Cylinders," we offer some good evidence of the value of Dixon's No. 635 graphite for gas engine lubrication.

THE POWER OF CONFIDENCE.

Confidence means a feeling of security and faith; it is the belief in the virtue of something or the integrity of something. Just fill up a man chock full of confidence and then let him go and he will climb up to the top of something or become a hero of some kind. It is confidence in his sweetheart that enables a lover to accomplish wonders; it is confidence in their leader that carries soldiers on to victory; it is confidence in their cause that gives missionaries strength to suffer torture without flinching. Much more might be said in regard to what confidence does. It is probably because of the confidence that the Dixon Company have in the usefulness of graphite and in the belief that the virtues of graphite products will some day be generally recognized, that we have never for one moment lost our enthusiasm or ceased to advertise or push our goods in the most vigorous fashion.

Then again it should be remembered by our readers that we ourselves have exceptional facilities for fully testing in the most practical, every-day way, the peculiar virtues of our own productions. We have roofs, smoke-stacks and boiler fronts to paint, not only at our factories here in Jersey City, but also at our mines and graphite works at Ticonderoga, N. Y. and at our cedar mills in Florida. We are therefore enabled to test the durability and economy of Dixon's Silica-Graphite Paint at our Ticonderoga works, where the thermometer goes down to forty below zero in winter and over one hundred in summer, obliging it to stand the extremes of a hot burning sun and keen frosty weather. This paint is also used on our Florida roofs and smoke-stacks, where it is not exposed to any degree of cold, but to great and moist heat and salt air. Here in Jersey City our works are exposed to the east winds laden with salt air—a severe test for paint.

Under all of the above conditions Dixon's Silica-Graphite Paint has proven more than satisfactory. It has been by all odds the most economical paint that we have ever used.

In all of our works we are enabled to thoroughly test Dixon's Graphite Pipe Joint Compound and find it superior to red lead or white lead in the making of joints of all kinds and for all metal connections. We also have thoroughly tested our Belt Dressing and Pure Flake Lubricating Graphite, and we "cipher and figger" with Dixon's "American Graphite" lead pencils.

Therefore, why should we not have confidence in our own productions and why should we not strongly advocate them when we know they will be equally useful to others.

GRAPHITE RESISTANCE RODS.

The Dixon Company manufactures graphite resistance rods having resistance all the way from one ohm to one million ohms. These rods are made only on order, as the requirements of electricians differ very widely indeed in both dimensions and resistance. The resistance is not governed by dimensions. Rods of exactly the same dimensions can be made with widely differing resistances. A rod 6" long and 1" in diameter may be made to have a resistance of ten ohms, or one thousand ohms, or even one million ohms. The price is governed by dimensions and not by resistance. It is for this reason that electricians requiring high resistance find it infinitely cheaper to use graphite resistances rather than resistances in the form of German silver or other metals. If electricians will tell us approximately what they want, it will save much correspondence. A short time ago an electrician wrote us asking for a graphite rod of the very highest resistance that we made. We sent him a rod with 100,000 ohms resistance and said that we were sorry that we had no rods of greater resistance. He replied that he was surprised we made rods of such high resistance, adding that the sample we sent was at least 90,000 ohms too high for him.

Electricians frequently write us for samples of soft rods and samples of hard rods, apparently with the idea that the softness or hardness determines the electrical resistance.

Therefore, as we have already said, if electricians will write us approximately what they want, so far as dimensions and resistance are concerned, it will save correspondence and we will be able to meet their requirements much better.

ON HIS VACATION.

MR. JOHN A. WALKER, Vice President, Treasurer, and General Manager of the Joseph Dixon Crucible Company, is now on his vacation, which, as usual, means some recreation and relaxation and a good deal of business.

Although Mr. WALKER is a stanch American in every particular, yet he has a strong liking for foreign countries, and has made several trips to the old world's cities and sights. This time he will again visit England, France and Germany, and possibly Italy. He will advise with the manager of the Dixon London branch and visit the several Dixon agencies on the continent. On this trip he will have some peculiarly difficult questions to settle, as the demand for Dixon's graphite products has so increased that many of the most prominent foreign houses are earnestly requesting to be made the sole agents.

Mr. WALKER is accompanied by his wife.

"WHY FOR DO YOU DO SO?"

Most of the manufacturing of the country is done by big concerns divided up into departments.

Gentle reader, we mean gentle buyer, you have no idea how much you would help yourself and get your commands better executed by observing the department system. For instance :

A buyer sends a check for last purchase and a new order in the same letter on the same sheet of paper. These two functions are executed by entirely different departments; the cash goes to cashier and the order to the order book room, but how can one piece of paper go two ways without having one or the other slip up?

The other day a Wisconsin firm wired: "Why don't you fill my order?" Apparently we had no order. On looking it up order was found on bottom of remittance letter. The cashier had his ears pulled, but he replied: "Why doesn't a man know better than to write to a house with departments, messages to two or three of the rooms on one piece of paper?"

IF TO-MORROW EVERY MAN PAID HIS DEBTS.

At the last annual meeting of the North Side Board of Trade, the following remarks were made in the course of a speech, by Mr. James G. Cannon, vice-president of the Fourth National Bank of New York, and president of the National Association of Credit Men.

"What would happen to this community if to-morrow every man who owes individual debts and is able to pay them should do so? I do not mean to refer to well-intentioned unfortunates who are not able to meet their obligations, but to those who have abundant means and can pay. The storekeepers on all your avenues would enlarge their stores; they would make them more attractive, they would bring in other trade; your physicians, dentists, professional men and local dealers would spend their money for improvements, build more houses, and the whole condition of your borough would be benefited manyfold."

Of the "Has Beens" there are many,

Of the "Ne'er Was" more by far,

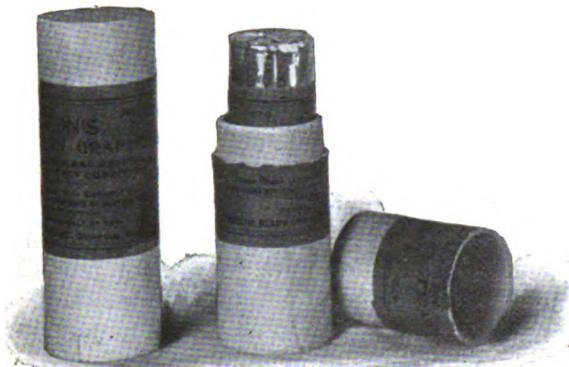
The "Going to Be" are legion,

But how few are those that are.—*N. Y. Life*.

DIXON'S CELEBRATED CYCLE CHAIN GRAPHITES.



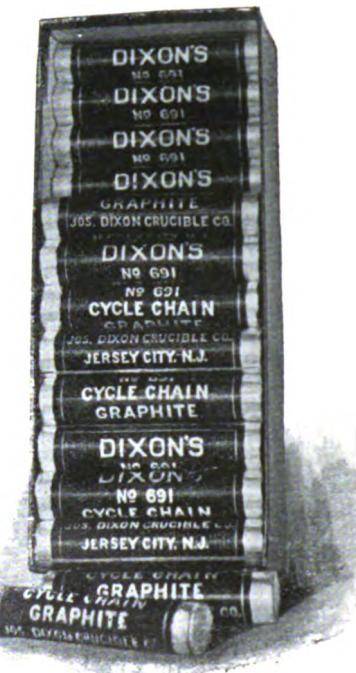
No. 678. This is a pure, soft graphite, ground to impalpable powder, and then reground with a choice lubricating oil of just sufficient quantity to make the graphite hold to the bearing parts of the chain. For home use or for repair shops it is specially convenient and useful. It is packed in $\frac{1}{4}$ -pound screw-top cans, making a convenient, tight package, and is readily applied with a piece of cloth, waste, or brush, to the chain.



No. 679. Each stick is wrapped in tin-foil and placed in a neat holding-case. It is not quite as convenient for small tool-bags as Dixons 691, yet it is preferred by many, and being in a wooden holder it is very handy for those who carry no tool-bag but who nevertheless want a stick of graphite in their pocket to insure a saving of muscle. This is the kind that was carried by Tom W. Winder in his 21,000 mile ride, and which "never failed to cause an easy running chain."



"L.A.W." Same size as Dixon's No. 679. It is wrapped in the royal purple of the League of American Wheelmen, in whose honor we have named it. It is also placed in a neat holding-case.



No. 691.

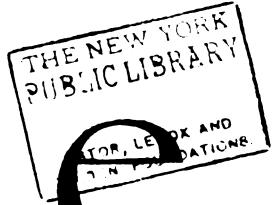
Dixon's No. 691 is well protected with best tin-foil, and is intended for the toolbag of tourists or general riders, and therefore it has no holding box. Its small size makes it peculiarly suited for the narrow chain of the modern bicycle.—What item in the construction of a bicycle is worthier of attention than the chain? It is the only bearing that is unprotected. It is exposed to dust and dirt and rain and rust. Dixon's Graphite is the only material that will not only lubricate the bearing parts perfectly but also prevent harm from grit, dust and dirt by coating it with soft, smooth graphite.



DIXON'S GRAPHITOLOEO.

No. 692. In **collapsible tubes**. Dixon's Graphitoleo is a preparation of a very finely pulverized and very choice graphite and a pure petrolatum warranted not to gum or become rancid. It is applied to bicycle chains by means of a piece of cloth—a small quantity being placed on the cloth and the chain run through it. Dixon's Graphitoleo will not only lubricate the chain and sprockets, but thoroughly lubricates the pivots or pins holding the links of the chain. For this reason, though not so handy, it is superior to the stick graphite, which does not lubricate the pins of the chain and is not intended to. Dixon's Graphitoleo is also recommended for lubricating and preventing rust on gun locks, etc., and for general use.

Graphite



VOL. I.

JULY, 1899.

No. 8.

Issued in the interest of Dixon's Graphite Productions, and for the purpose of establishing a better understanding in regard to the different forms of Graphite and their respective uses.

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GRAPHITE.

Graphite, or plumbago, was originally brought to this country in small quantities, as a curiosity, there having never been found any but very small deposits of the more useful varieties on this continent, except at Ottawa, Canada, and Ticonderoga, Lake Champlain.

It being one of the difficult and refractory substances to manipulate, but few persons in the world were able to bring it into shape that would render it useful to the arts or manufacturers, and what did enter into legitimate commerce was manufactured in Germany. But the crucibles of foreign make proved not only expensive but unreliable, which was a serious drawback to the growing industries of this country.

In the year 1827 a new and successful rivalry to the German trade sprung up in Salem, Mass. One Joseph Dixon, a worker in metals, had turned his attention to the subject of a reliable crucible, which he thought of vital importance to the successful manufacture in metals, and some samples of Ceylon plumbago, brought by ship captains as a curiosity on account of its great beauty and purity, coming into his hands, he set himself to work to test its qualities in the manufacture of crucibles. Though the quality was superior to the German graphite, the difficulties of grinding and bringing it into controllable shape offered unexpected obstacles to his success. But this was subsequently overcome by the invention of new machinery, which resulted in the present style of crucible, extensively used by all metal workers in this country and Europe. Thus Mr. Dixon not only secured the long-sought relief in his metal work, but in a few years found himself at the head of a large and growing industry, and instead of the occasional sample of a beautiful mineral looked upon as a curiosity, he

saw shiploads arriving from Ceylon, that being the only place where the material of the requisite quality has yet been found in suitable quantities to meet the demand of commerce. He saw also the Dixon crucible shipped to all parts of the civilized world, including China and Japan.

Though there are a number of crucible works now in the country, they may all trace their origin to Joseph Dixon, Esq., most of the practical workers having learned the business with him.

The Dixon Company now claim to be the largest concern of the kind in the world. Under their manipulation graphite has been so perfected that it enters into almost every industry and they are equipped to experiment in new channels, and to manufacture articles from sketch or pattern for any purpose to which graphite can be applied.

A CONTRIBUTION.

The knights of old,
Though brave and bold,
Wore armor but half bright ;
They never knew
—Like we now do—
The value of graphite.

The ancient dame
Was much the same
With rusty stoves in sight ;
She did not know
How stoves will glow,
When polished with graphite.

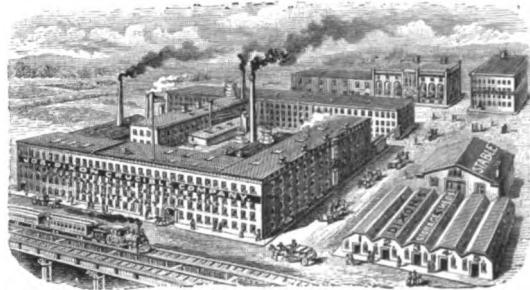
The artist, too,
Quite often drew
His sketches with a coal ;
The modern West
With a "Dixon's Best"
Brings out the very soul !

Great minds, and small,
Short men, and tall,
The angel, and the vixen,
Here and there
And everywhere,
Revere the name of DIXON.

"I buy, I try each pencil new
With tip or other fixin',
And still, I will, before I'm through
Wish I had stuck to DIXON."

ESTABLISHED 1827.

INCORPORATED 1868.



JOSEPH DIXON CRUCIBLE CO. JERSEY CITY, N. J., U. S. A.

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President. *Vice-Pres. and Treas.* *Secretary.*

JERSEY CITY, N. J., July 1899.



THE EDITOR

takes this occasion to thank the numerous friends for their contributions to "GRAPHITE"; which, although they are not published, are none the less appreciated. As it is intended that this paper shall be to a large extent devoted to a description of graphite and its application to the needs of almost every known business and manufactory of the present day, we do not feel it to be justice to our readers to publish articles which have no possible relation to that important product.

Our waste basket is big enough to hold any quantity of manuscript, and the postage stamps which once in a while reach us, can be utilized in other channels.

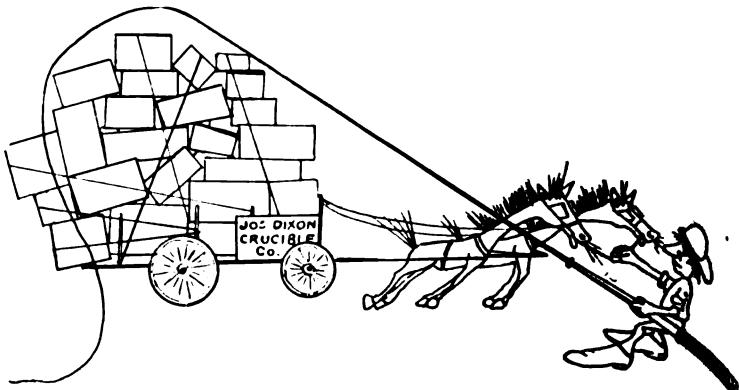
From the fact that we receive very little on the subject of graphite, we are encouraged in believing that our periodical should be interesting, and well worth careful reading.

The illustrations on this page prove that there is a humorous side to the graphite industry—and reference to other columns will show a little in the poetical line.

FOREIGN DEMAND FOR DIXON GOODS.

In the latter part of May, 1899, we made a shipment to Australia of three carloads of Dixon's graphite products; stove polish, pencils, crucibles, axle grease, pipe joint com-

pound, graphite paint and lubricating graphite making up the invoices. The orders that were filled covered a general



line of Dixon's goods. Another carload was shipped to the same port last week.

Mr. George W. Wollaston, Manager of our London salesroom, in a recent report says: "In the electric tramway system of the continent of Europe, Persia and other outlying countries, we are breaking our way for Wood Grease. Have just contracted for a shipment of 10 barrels of this graphited grease to Alexandria, Egypt. We have supplied several barrels to the tramways at Ostend, which are girdled all over the coast and running into the country much the same as in Jersey City."



MR. LEAD PENCIL—"Well, Mr. Candle, I'm just about used up. I was out all night with a newspaper reporter."

MR. CANDLE—"That's nothing. I was out all night and I don't feel used up."



DARKTOWN'S INFILCTION.
Husband—"Maria, what's de matter wid de boy?"
Wife—"De doctor says he's got plumbago in his side from suckin' lead-pencils. Dat comes from too much edication."—Judge.

ORIGIN OF THE LEAD PENCIL.

The lead pencil, the most common of all writing implements, is a product of the seventeenth century. It is but natural to suppose that the lead pencil contains the ingredient of its name—lead. But not so. In the mineralogical sense there is not a particle of lead in its composition. The term "lead pencil" is a misnomer, and yet it continues to pass under so misleading a name. The origin of the misnomer is this: The lead pencil originated with the discovery of the graphite mines at Barrowdale, England, in 1664, during the reign of Queen Elizabeth. At that time there were already other minerals known, galenite in particular, possessing the same black, lustrous color, and the peculiarity of streak that also characterized the new substance, graphite. Graphite, so strongly resembling galena (bleiglanz), was given the name of blei (lead), and to distinguish it from the lead already found, it was called Wasserblei (molybdena). To make the matter even more confusing, the makers of lead-pencils called themselves Bleiweisschneider (white-lead cutters).

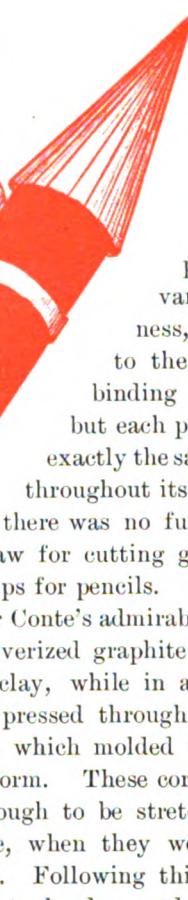
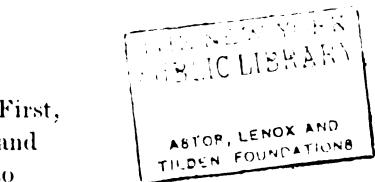
The early mode of lead pencil manufacture was most simple. Graphite, as yielded from the mines, was treated much like wood. It was sawed into thin sheets, then cut into strips, and these strips again cut into smaller strips, until they were reduced to pieces small and strong enough to serve as pencils. These pencil strips were provided with a wooden covering as a protection.

The first pencils created much excitement. The graphite mines of England were considered of inestimable value, and were protected by law. The treasury of the mines was not inexhaustible, and the valuable material was extravagantly wasted for want of proper working methods. First, in the digging there was much loss, for many of the pieces were too small for cutting. Second, the manner of cutting the graphite was so crude that fully half of the material was lost. Economy was urgent and suggested means of utilizing the waste

material. This necessitated the use of a binding substance. Many experiments in this direction were made with glue, gum, isinglass, etc., but all were equally fruitless.

The introduction of such binding substances only rendered the graphite hard and brittle and of uneven hardness throughout the pencil's length. Its marks were faint and indistinct, and if the point broke it involved much trouble

and delay to again sharpen it. First, the wood had to be cut away and the graphite heated over a light to soften it,—after which it was drawn into a point with the fingers. In 1795, a Frenchman, Conte, chanced upon the idea of using pulverized graphite and binding clay. That his plan was eminent- ly successful is apparent in the excellence of our pencils of to-day.



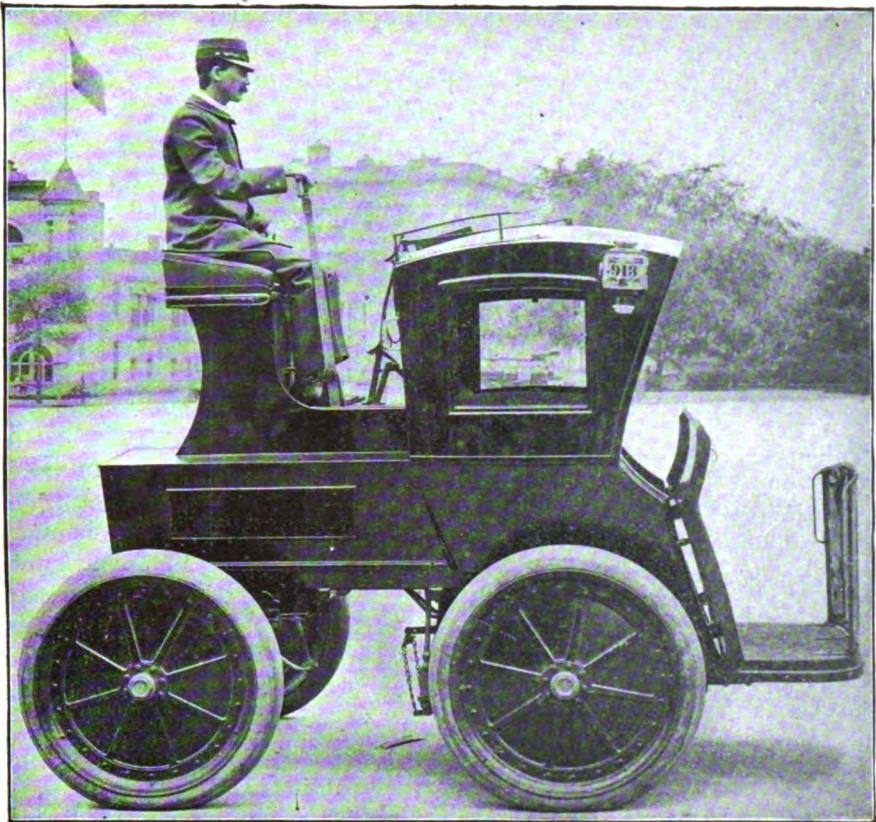
This discovery resulted in pencils of varying hardness, according to the amount of binding clay added, but each pencil was of exactly the same hardness throughout its length; and there was no further use of saw for cutting graphite into strips for pencils.

After Conte's admirable discovery, the pulverized graphite mixed with binding clay, while in a soft, moist state, was pressed through a sieve-like metal roller, which molded the material into cord-like form. These cords of graphite were firm enough to be stretched lengthwise upon a table, when they were cut into the required lengths. Following this they were placed in a warm oven to harden, and finally were encased in wood. One improvement suggested another, and the development of the pencil to a state of perfection was rapid.

A PATRIOTIC ODE.

Georgie had a cherry tree
Which grew so awful slow,
That Georgie brought his hatchet out
And said the tree must go.
Then Georgie swung his little axe
With sturdy, ringing blow,
Until the dilatory tree
Was speedily laid low.
Now DIXON fells the cedar tree,
Red hued and straight of grain;
Then saws and seasons, splits and shapes,
And seasons well again.
Then fills the sticks with graphite pure,
(We always call it "lead")—
The stuff that makes the artist's lines
Or letters to be read.
For smoothest wood, that whittles straight,
And leads that will not break,
For Yankee product, Simon pure,
The "DIXON" takes the cake.

From the "Trade Mark," Pittsburgh.



Dixon's No. 688

is a specially fine lubricating compound for the gears of

ELECTRIC MOTORS.

It has been thoroughly tested by the motor vehicle companies in France as well as in this country and has given perfect satisfaction.

To those interested we would be pleased to send a sample with prices.

AN OLD-TIME PREDICTION.

The "AMERICAN GROCER," in April, 1873, said: "We predict the time is not far distant when Dixon's American Graphite Pencils will be as well known and as extensively used as Faber's. They have the merit, and the Company have the means and mind to make them a household word everywhere."

In the light of the above prediction it might interest our readers to know that to-day the output of Dixon's American Graphite Pencils is probably larger than that of any other single pencil manufactory, and orders are received for these pencils from every civilized country on the globe.

Our shipping department is responsible for the statement that the Dixon Company have shipped their goods to every country in the world, excepting Turkey and Arabia.



AN UNSOLICITED TESTIMONIAL.

REDFIELD, May 19, 1899.

JOSEPH DIXON CRUCIBLE CO.

Enclosed please find \$1.00, for which kindly send me by express 10 No. 600 cans of your Graphite Axle Grease, or the \$1.00 worth. This is my 14th year of using it. I have never found anything so satisfactory and don't wish to. Am sorry to trouble you with so small an order, but it runs my 19 carriages and wagons two years and keeps the boxes and spindles in the best of shape. Do you wonder I like it?

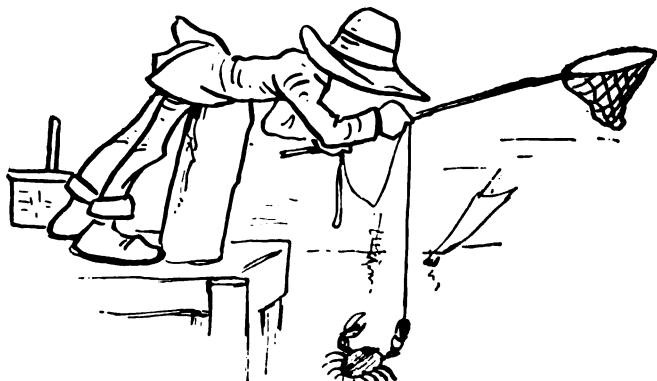
"THE ELMWOOD."

CHAS. E. STEVENS.

THE DIXON COMPANY recently received a foreign letter addressed:

JOSEPH DIXON, Esq.,
CRUCIBLE Ct.,
JERSEY CITY, NEW YORK,
U. S. AMERICA.

A DIXONIAN VACATION.



Graphite

VOL. I.

AUGUST, 1899.

No. 9.

Issued in the interest of Dixon's Graphite Productions, and for the purpose of establishing a better understanding in regard to the different forms of Graphite and their respective uses.

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ON THE BRINY DEEP.

JOHN A. WALKER'S CHRONICLE OF A DELIGHTFUL VOYAGE.

*On Board
Steamer Kaiser Friederich.*

First day, Tuesday, May 23, 1899.—We swung into the river with a deluge of good wishes, plus gifts of sweets, books and fruit. Blessed be the "feller" that sent me "David Harem;" after the Madame he was easily the best *compagnon du voyage*. Once afloat, what promised to be on shore a hot, sultry morning dropped into delicious coolness. The big ship, the big sea, the big dome of the sky, the big circle of the horizon, soon demonstrated that we were on the briny deep.

The passenger list shows an unusual crowd; dining tables are squeezed in almost everywhere. German is the prevailing tongue of passengers and crew alike. We lapse into instant laziness, school ashore must keep without us to-day, as every minute the receding ship takes us farther and farther from the daily scenes of the last twelve months.

Luncheon comes at 1, when you get your permanent seats at the table. You locate your deck chairs, unstrap the steamer rugs, mummy your wife up, and thus we go for the coming seven days; no mail, no telegrams, no paper, a nap after luncheon, early to bed, late to rise, meals at any reasonable hour, bouillon and sandwiches between meals in the forenoon, lemonade and ginger snaps in the afternoon, plus all the stuff from the bar that your thirst demands and your pocketbook can pay for. To-day, the first day, the sea is smooth, the wind light, at night the almost full moon rises on a resplendent scene, and so peacefully ends the enjoyable hours.

Second day, Wednesday, May 24, 1899.—We awoke at 8 a. m., with a ten-mile northeast wind, which slowly stiffened into a twenty-miler, which plus the twenty miles of the ship in her teeth, meant later on a big rolling. The deck amusements come forth; shuffleboard and ring-toss, while the poker sharps were already glued to their seats in the smoking room. The "auction pool" on the run was rigged up, with two or three smaller and less exciting "hat pools."

At noon the chart showed a disappointing run, only 439 miles. "The old tub!" said one man with a disappointed

voice. Breakfast, luncheon, dinner, flow on in serene succession. Some piano people fill the music room with sweet sounds, and at 11 a. m. the ship's band play for a half-hour to every one's delight. But the wind increased. The big waves rolled higher and higher. Clouds bigger than a man's hand gathered, and we all turned in saying "A nasty day to-morrow."

Third day, Thursday, May 25, 1899.—Sure enough, it came "nasty" to the core. A big, big wind; a bigger, bigger sea; the rollers were veritable giants. The big ship put her nose into them and they flooded the decks, making outdoors uninhabitable. Seasickness flew like the measles in a public school; the tables were deserted, and the ship tossed, plunged, rolled, squealed and pitched like a peanut in a Long Branch surf. Moving about became impossible. The melancholy band played to a few whose stomach was storm-proof, and at early evening every one but the poker sharps "turned in" and let things rip. The run was 434 miles again. The "old tub."

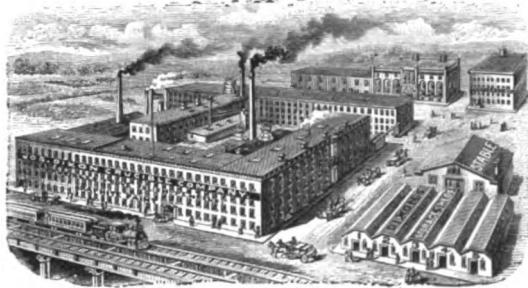
Fourth day, Friday, May 26, 1899.—Peace conquered before the day broke, and although the start-in was a trifle sullen, yet, as the day wore on, everybody again smiled. Soon old Sol came forth, dried the decks, dried the air and pushed the mist and fog into nowhere. The piano folk surrounded the piano once more, the band at 11 a. m. was cheered to the echo; never did bouillon and sandwiches taste better. The run dropped to 420, and was laid to the storm, but storm or not, it way vexingly low—too low for an "express steamer." "Can't some one get out and push?" said one. "What about getting out and walking?" said another, and when a three-master schooner was sighted a third said, "Let us get a transfer for speed purposes."

Fifth day, Saturday, May 27, 1899.—Day fine, and wore on dull. At noon the run 444 dropped every one's mouth. Cherbourg, Southampton, Bremen, seemed unattainable places. The Kaiser Friederich was cussed from stem to stern. The sea was smooth, like the Hudson at Cortlandt street, the wind nit. No water craft came or went from sunrise until sunset, save one petty schooner, and no other signs of ocean life, but a carey chicken or two. The deck interests languish in the dullness, monotony reigns supreme until 7 o'clock dinner, when the entire ship is present.

All the sick ones have now their sea legs on and nearly six hundred crowded the big banquet room. The band redeemed the day. "Trovatore" selections came first, then a waltz, then a medley of "American Airs." In quick succession came "Dixie," "Marching Through Georgia," "Red, White and Blue," "Hail Columbia," "My Country 'Tis of

ESTABLISHED 1827.

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E. F. C. YOUNG, JOHN A. WALKER, GEO. E. LONG,
President. *Vice-Pres. and Treas.* *Secretary.*

JERSEY CITY, N. J., August 1899.

Thee," and when the "Star Spangled Banner" came, enough wine bottles had been emptied to make the gay crowd wild. They rose *en masse* at the "Star Spangled Banner" chorus and joined in, all hands around.

My next table companion, a German educated at Bonn, domiciled at Detroit, was most appreciative of all, and now at 10 p. m. the music room is full, the strains of the piano fill the air, a chorus is gathered round, and here is a group at whist, another at euchre, a third at cribbage, and so the day wanes, and one after another we "turn in." The big ship scarcely shivers.

Sixth day, Sunday, May 28, 1899.—The sixth day in this instance is Sunday, a Continental one in contrast to a Puritan Sunday. Our little world rose late, and one by one in slow procession got out of doors. The clouds were low and dull, the sea calm, and at intervals it drizzled. No water craft visible, not even a bird varied the water-scape. Card playing went on galore.

No church service as in some other steamers; no players; the only approach was a cornet solo of one of the noble bits of German oratorio music, as a preface at 7.30 a. m. to the usual "Wake up! wake up, if you please!" by the same player. The band played at 11 as usual, then the between meals "snack," then luncheon; then, if you please, your siesta, when later with 7 p. m. dinner came the gala hour. The band people both sang and played and were cheered top lifter fashion, and when "Wacht am Rhein" came the whole crowd clinked glasses and cried, "Bravo!"

At 9 a. m. came the usual charity concert, a variety affair, with a whistling solo, more music by the band, a solo by Madame Flower, and then two piano solos by Emil Sauer,

one of his own composition, the other a selection from Chopin. Herr Sauer was going home after a big success in New York. As usual, concert hour was the signal for the fog to drop down, and sure enough it came, and the strains of the band, the beauty of the solos, the delicate fingering of Herr Sauer, were supported by the grawsome "toot" of the fog whistle. It was long past midnight before the last lights were turned off and the gay Sunday crowd slipped off to bed.

Seventh day, Monday, May 29, 1899.—The run dropped again below the average, viz. 434, and this in smooth seas, clear skies and no wind.

To-morrow we will see the Scillies, Guernsey, Cherbourg, and late at night Southampton, plump seven days and ten or twelve hours between wharf and wharf. So ends a lovely voyage. The ship is a world in itself. A half a dozen different nationalities are with us, all grades of social rank, people of gifts, others with none; people of dignity and others who do not care; people with faces the very exponent of selfishness, others who look so capable and so helpful, with big talents for usefulness. In one thing only all agree, as I have not met one yet to whom this is a first or even a second trip. It is a shipload of travelers.

John A. Walker.

P. S.—It took in old times a night as well as a day to make full time, so the seventh night went off with all the display at the ship's command. At 7 p. m. dinner the extras were profuse. Evening dress was in order. The band played continuously, and when coffee was served the flags were unfurled, first the French, then the English, with "God Save the Queen," and three cheers for her Majesty; then the Stars and Stripes, with wild hurrahs, and the "Star Spangled Banner" with three cheers for McKinley, and finally the German flag, with the "Wacht am Rhein," and still wilder cheers.

It foreshadowed Tennyson's "Parliament of Man," the great federation, the good time coming. In the general hilarity we forgot the dull day, the disappointing run, and going out-doors we found it was decorated from stem to stern and later came the band again with promenading and dancing until the early morning hours. We now see the Scilly Islands and soon will come Cherbourg.

J. A. W.

PENCILS MADE OF HISTORIC CEDAR WOOD.

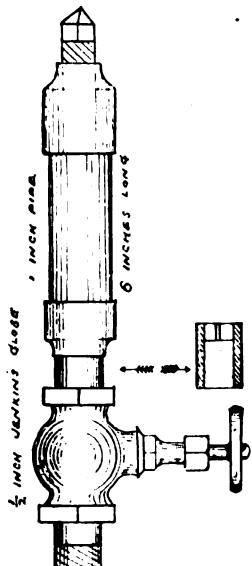
Florida is the home of the straight grained, soft, red cedar of which all fine pencils the world over are made.

The building of Fort Marion, St. Augustine, was begun by the Spaniards in 1650 and the wood used in construction of the girders was the same kind of red cedar used for lead pencils. Mr. John A. Walker, the vice-president, treasurer and general manager of the Dixon Company, while on one of his annual trips to the Dixon cedar mill at Crystal River, Fla., where all the cedar is sawed for our "American Graphite" pencils, stopped off at St. Augustine for a few hours recreation. While there, Mr. Walker visited Fort Marion, the oldest fort in the United States, and found the officer in charge taking down one of the old cedar girders. On Mr. Walker making himself known and expressing a wish for a piece of the historical wood he was

presented by the officer with about a cubic foot of the coveted and precious wood, and on his return to the factory had it manufactured into lead pencils and appropriately stamped. These lead pencils he has shared with his many friends, by whom the pencils are most justly prized.

GRAPHITE FOR ENGINE CYLINDERS.

One of the Engineering papers sends us a letter from a subscriber asking us where he can obtain a pump to force graphite into engine cylinders. This reminds us to say that there are several devices for introducing Dixon's Pure Flake Lubricating Graphite into engine cylinders. First



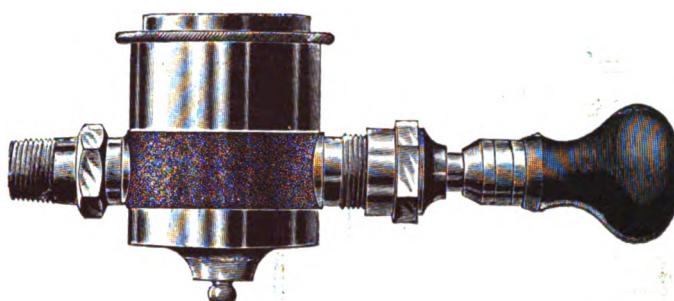
No. 1.

we show an illustration (No. 1) of a home-made, but very satisfactory device. We are told that the total cost is not over twenty-five to fifty cents. An engineer writes as follows concerning his experience with graphite in cylinders, introduced by means of this device:

"I have used plumbago for years in locomotive cylinders and journal boxes, in stationary engine cylinders and bearings; on bolts, studs and pipe-threads, hand-hole and man-hole gaskets, and for cylinder, steam-chest and flange pipe-joints. Dixon's Flake Lubricating Graphite is the best of any I have used heretofore. I have always either pumped or poured the plumbago into the cylinders. Dixon's dry flake graphite I feed into the steam-chest with cups made from piping as per sketch. In the nipple indicated by arrows I drive in a brass plug and drill a 1-16th hole. I fill the cup once in three days and the steam takes care of the graphite. I have reduced the feed of cylinder oil one-half of the amount formerly used. I put one cup on each high-pressure steam chest, and the exhaust carries the graphite over into the low-pressure cylinder and over into the air-pump. It is used three times and discharged into the river. It is not worth trying to save it to use over, as I have heard some say they do. I hope engineers generally will make themselves better acquainted with graphite and learn the difference between Dixon's Flake Graphite and the ordinary commercial plumbago."

Our own experience has been chiefly confined to the use of a regular sight feed oil lubricator in which we have introduced finely ground flake graphite, putting in a teaspoonful in the morning and another teaspoonful at one o'clock

when starting for the afternoon run. The graphite is carried flake by flake with the drops of oil to the engine cylinder, and while the doses are exceedingly small it is only a question of time when the inside of the cylinder is very nicely coated with an almost frictionless surface of flake



No. 2.

graphite. We are now using a small hand-oil pump such as we show herewith (No. 2).

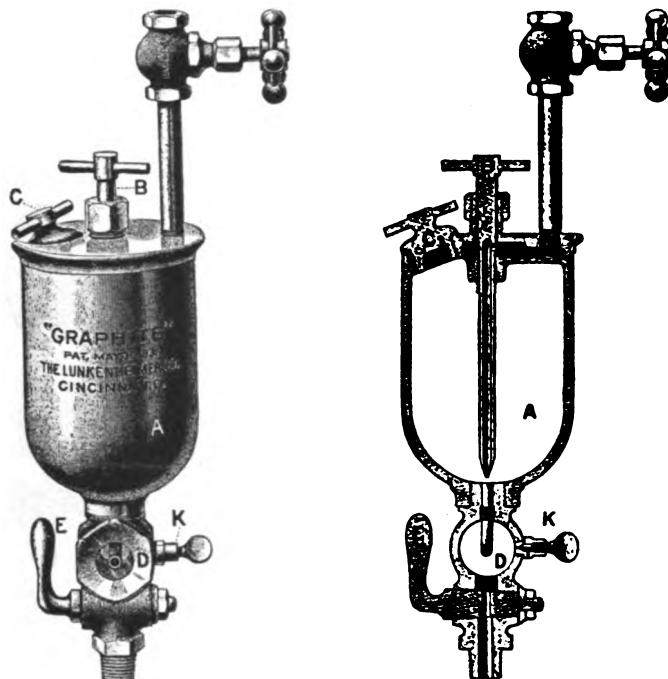
Some time ago we had in our employ an exceedingly clever and expert engineer who made it his business to visit large steam plants with a view of introducing Dixon's Pure Flake Lubricating Graphite, and under his direction many of these pumps have been attached to engines with most pronounced results in ease of running, saving of oil, labor and trouble. We quote the following about him from our pamphlet entitled "Graphite as a Lubricant."

WHAT AN EXPERT ENGINEER DID.

In order to demonstrate the value of Dixon's Pure Flake Graphite as an aid to better lubrication, and a saving in oil, etc., the Dixon Company secured the services of an expert engineer with years of practical experience, who spent several months visiting large steam plants. He made it a part of his business, whenever possible, to indicate the horse power of every plant visited, and to demonstrate that with proper lubrication a large amount of horse power, time, oil and labor could be saved. At Rochester, N. Y., he indicated the Corliss Refrigerating Machine of the Genesee Fruit Company. He found that thirty-horse power was required to drive the machine. He attached a small hand oil-pump to the steam-pipe, mixed a very small quantity of Dixon's No. 2 (fine) Flake Graphite with their regular lubricating oil and pumped the mixture into the cylinder. After the graphite had had a chance to thoroughly coat the inside of the cylinder, and after he had looked over the other bearings of the engine somewhat, and dropped a little graphite here and there where he thought it would count, he again indicated the engine and found that it only required twenty-six horse-power, a saving of four horse-power. Their engine runs twenty-four hours per day, seven days a week. Previous to the visit of the Dixon expert the Fruit Company were using seven quarts of oil per week. After his visit they were able to run a week of seven days with only one quart of oil, and a very small quantity of graphite, not only making a saving of at least 75% in oil, deducting cost of the graphite, but also a saving of over 13% in power. This is only one of many similar cases.

We also show herewith a Graphite Sight Feed Lubricator manufactured by the Lunkenheimer Company of Cincinnati, Ohio. The Lunkenheimer Company claim to have succeeded in constructing a lubricator that not only feeds the graphite automatically and continuously in desired

quantities, but also does it visibly, by passing it through a sight-feed.



Exterior view of cup. Sectional showing interior construction.

They claim that a sight-feed oil lubricator becomes entirely unnecessary when an engine is provided with a graphite cup, but that in connection with the graphite lubricator they recommend an oil pump for occasional use, especially while starting the engine.

We have heard this cup well spoken of.

NATURE AND PECULIARITIES OF GRAPHITE.

Graphite, commonly but wrongly called plumbago or black-lead, is, next to the diamond, the purest form of carbon known; it is soft and smooth, and a good conductor of heat and electricity. Acids and alkalies will not act upon it, and it will resist a degree of heat that will liquefy nickel.

LUBRICATING QUALITIES OF GRAPHITE.

Graphite being the softest and smoothest of all known materials, and a most excellent conductor of heat, it is readily seen why all authorities on lubrication agree that pure flake graphite, properly prepared, is by all odds the best natural lubricant known to science.

WHAT YOUR BICYCLE IS.

Your bicycle is simply a machine or engine for converting power into work, and you are the power that drives the engine.

All engines are more or less wasteful of power, whether it is steam power or human power. Human power can least afford to be wasted.

Friction is desirable or undesirable, according to where it is. You want it between the tire and the ground, but you don't want it in the bearings or the working parts of your wheel.

Remember that all the bearings are inclosed and made as nearly dust proof as possible, with the single exception of the chain and sprocket wheels. They are exposed, and therefore require your special and constant care. All

greases and oils, however good as lubricants, catch and hold dirt and grit. Mica, soapstone, talc, and all so-called "white graphites" are comparatively worthless as lubricants.

Dixon's pure flake graphite is acknowledged by engineers and scientific experts to be the best solid lubricant known. It is the ONLY lubricant that should be used for chains and sprockets. It economizes power and saves wear and increases the pleasures of the wheel.

For the manufacture of chain lubricants we use only a very pure and a very finely pulverized flake graphite.

UNNECESSARY "TRACING" OF SHIPMENTS.

A circular to agents of the Lehigh Valley over the signature of M. B. Cutter, superintendent of transportation of that road, calls attention to the burden with which most men are familiar, resulting from the unnecessary requests for "tracing" shipments by the too impatient consignees and others. The circular says:—

"Your attention is specially directed to the large number of requests which are being made for tracing carload and less than carload shipments, accompanied by requests to hurry forward to destination and to establish delivery to consignees.

The volume of this tracing, particularly that which is done by telegraph, has reached such proportions as to become a serious burden, and it is found that in many instances where special tracing has been asked for, the shipments were unimportant or not specially wanted, and the action taken in such cases has interfered with, and in part prevented full and proper attention being given to shipments that were really important and deserving of special action.

To avoid this, it is suggested that you do not ask for the tracing of any shipment, except at the request of consignee, and then only after shipment has had a reasonable time to reach destination. Requests of shippers for tracing should not be acted upon unless accompanied by evidence that the property has failed to reach the consignee after a reasonable time has elapsed, or in case special circumstances connected with the shipment seem to warrant the tracing being done at shipper's request.

Telegraph requests for tracing should be made only when the case is urgent."—*The Railway Age*.

THE POETRY OF BUSINESS."

Vice-President Walker in his tour of the agencies of the Dixon Company in foreign countries, writes from Zürich as follows:

"We had the poetry of business to-day. The Swiss agent of the Dixon Company is at Horgen, eight miles from Zürich. His large works is at Horgen and his house (residence) is in the same building with his offices. The whole thing is on the lakeside. His dwelling is a beauty and the surroundings superb. We talked all business matters out in two hours and then adjourned to his dining room for strawberries and Swiss wine. After he had shown us all over his grounds and gardens his carriage drove up and we enjoyed a lovely and restful ride of eight miles to our hotel at Zürich."

Graphite

VOL. I.

SEPTEMBER, 1899.

No. 10.

Issued in the interest of Dixon's Graphite Productions, and for the purpose of establishing a better understanding in regard to the different forms of Graphite and their respective uses.

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THE VALUE OF FLAKE GRAPHITE AS A PROTECTIVE PIGMENT.

During a discussion on Bridge Painting by members of the American Society of Civil Engineers, Mr. A. McC. Parker, M. Am. Soc. C. E., said:

"In 1871 the Department of Docks constructed a very large floating derrick. The back stay of the tower was carried down to a very heavy cast-iron circle, about 45 feet in diameter, which was bolted down through the hull of the scow to the keelson. The top of the circle was dished, so that there were in the top probably 35 or 40 receptacles in which water could lodge to a depth of six or eight inches. The captain of the derrick, who had superintended its construction, painted this cast-iron circle with lubricating graphite thinned down with kerosene oil. This was applied

twenty-six years ago. It has received none since, and today the scales of graphite can be rubbed off with the finger. Although it is out in the weather under the most adverse conditions, the iron is perfectly preserved."

Mr. William Metcalf, Past-President American Society C. E., said:

"Mr. Parker's reference to the use of graphite calls to mind an experience of the speaker some fifteen years ago. Knowing the almost indestructible nature of carbon, it occurred to him that if he could get a carbon surface on the iron, rusting would be prevented and a great deal of trouble avoided. At that time the Siemens regenerator furnace was being extensively used, and cartloads of soot, which was a very soft and pure carbon resembling India ink, was taken out of the flues every week. This was mixed with various oils, but nothing could be found which would make it adhere firmly to the iron. It had no more adherence than whitewash."

These two cases show the wide difference between carbon paints as well as between graphite paints. There are some forms of graphite which answer as paint pigments no better than the soft and pure carbon of which Mr. Metcalf speaks.

It is only thin, flake graphite, such as is used for lubricating purposes, that fully answers the requirements of a protective paint, as stated by Mr. Parker. The thin and minute flakes of graphite attach themselves most firmly to

the metal, protecting it thoroughly for years and years. It is of such graphite that Dixon's Silica-Graphite Paint is made. In evidence of the durability of this paint we need only mention the fact that the Morgan Iron Works, situated in New York City on the East River, have been painted with Dixon's Silica-Graphite Paint for many years; some portions not having been painted in twenty-eight years.

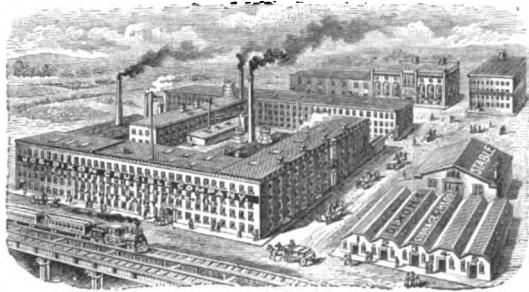
HOW A CHEMIST CAN FAIL AS A PAINT EXPERT.

There is a greater range of quality in a natural or genuine pigment than is possible in artificially-made pigments like white-lead. This is most conclusively shown in graphite and in ochre pigments. Chemists have declared one graphite pigment superior to another simply because it ran higher in carbon, while as a matter of fact the graphite highest in carbon, and therefore purest in quality, was comparatively worthless as a protective coating against the wear and tear of storms and other agencies so destructive to paint.

The proper form of graphite for protective paints is the thin, tough Ticonderoga flake graphite ground to an impalpable degree of fineness together with finely pulverized pure silica. Silica is acknowledged to be a most desirable filler and has great durability. The value of ochre paints largely depends on the amount of silica carried. The best French ochres carry 40 to 50 per cent. silica, and less than 20 per cent. of oxide of iron. As it is with graphite so it is with ochre; not every earth that is properly termed an ochre, because of its chemical composition, is fit for use as a paint, and some of those ochres which best answer the chemist's definition of pure are utterly unsuited for the purpose of the painter. According to the *American Architect and Building News*, a laughable instance of error from this mistake on the part of a chemist of ability, but without any special knowledge of paint manufacture, occurred a few years ago. A well-known Boston chemist who was employed by a member of the Massachusetts Society of Master Painters and Decorators to analyze a number of ochres which had been purchased at different supply-houses in Boston, reported that all the samples submitted to him for examination were largely adulterated because none of them were pure hydrated oxides of iron. But, as was immediately shown in one of the leading painting-trade magazines, the very samples which the Boston chemist condemned were proved by the analysis which he gave to be ochres of excellent quality from the standpoint of value to the painter, however they may have appeared to the chemist without special training in the analysis of paints.

ESTABLISHED 1827.

INCORPORATED 1868.



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President. *Vice-Pres. and Treas.* *Secretary.*

JERSEY CITY, N. J., September 1899.

GRAPHITE CUP GREASES.

Dixon's Graphite Cup Greases possess the merit of having all the good lubricating qualities of the best mineral oils, and at the same time, being in solid form, are simple and economical in application. The objection usually argued against greases, that they have to be reduced to the fluid condition before being effective, hardly applies to these greases, since, being composed almost entirely of mineral oils, they reach that condition the moment they strike the journal.

Their value as lubricants is infinitely increased by the addition of the proper amount of Dixon's Pure Flake Lubricating Graphite, which increases not only their lubricating qualities, but increases their durability as well.

The action of the graphite is first to even up the inequalities of the frictional surfaces, and then to distribute itself evenly over those surfaces, thus to a great extent preventing metallic contact. Graphite is the only solid substance known which possesses lubricating qualities, and Dixon's Pure Flake Lubricating Graphite is known the world over as the standard.

The greases are made in six degrees of hardness, numbered 0, 1, 2, 3, 4 and 5 respectively; No. 0 being the softest, about the consistency of a soft vaseline; No. 5 is the hardest and has a consistency about that of tallow, but with somewhat more cohesiveness. The softer grades are extremely valuable in the lubrication of light, high-speed spindles, and may be fed by means of compression cups or in open bearings. The harder grades are suitable for work more severe, so far as pressures are concerned. They have sufficient body to stay in place even at very slow speeds

and high pressures. All of these greases may be fed through compression cups, the harder grades of course requiring greater compression and larger openings. In general they may be used in exactly the same manner as any other greases of corresponding consistencies. As no animal fats enter into their composition, no fear of corrosion, even of composition surfaces, need be felt.

SOMETHING ABOUT PRICES.

Orders are frequently sent to us for lead pencils, crucibles, graphite paint or some of our products in which price is omitted. Occasionally, but very seldom, a customer on sending us such an order writes us after receipt of his invoice saying, "I can buy Smith's pencils at 50c. per gross less than you charge," or "I can buy Brown's Crucibles at 1c. per number less than you invoice me," or "I can buy Jones' Graphite Paint at 20c. less per gallon than you charge me, and I have no doubt it is as good as Dixon's Silica-Graphite Paint." The customer adds further that he expects that the Dixon Company will make its prices the same as those offered by Smith, Brown, and Jones.

Now in the first place, the Dixon Company has very good reason to believe that its goods are not only equal but in many cases superior to the goods made by its competitors.

Our prices are based on the cost of production and are fair and just and we always insist on our invoice price being paid, on the ground that a customer, even though he has not asked our price, should pay us the price that other customers willingly and freely pay for the same goods.

The "Journalist," in commenting on this question of rates rightly says, it is far better to make a free gift than to sell at a price unfair to yourselves and unfair to others. For example, if the "New York Evening Post" orders a novel from Mr. Howells without stating a price to be paid, he can sue them for the amount he is paid for similar work by "Harper's" or the "Century," and he would win his suit.

The fact that Dr. Squills charges only \$2.00 a visit is no reason why a patient should refuse to pay Dr. Lancet \$5.00, if that is his regular price.

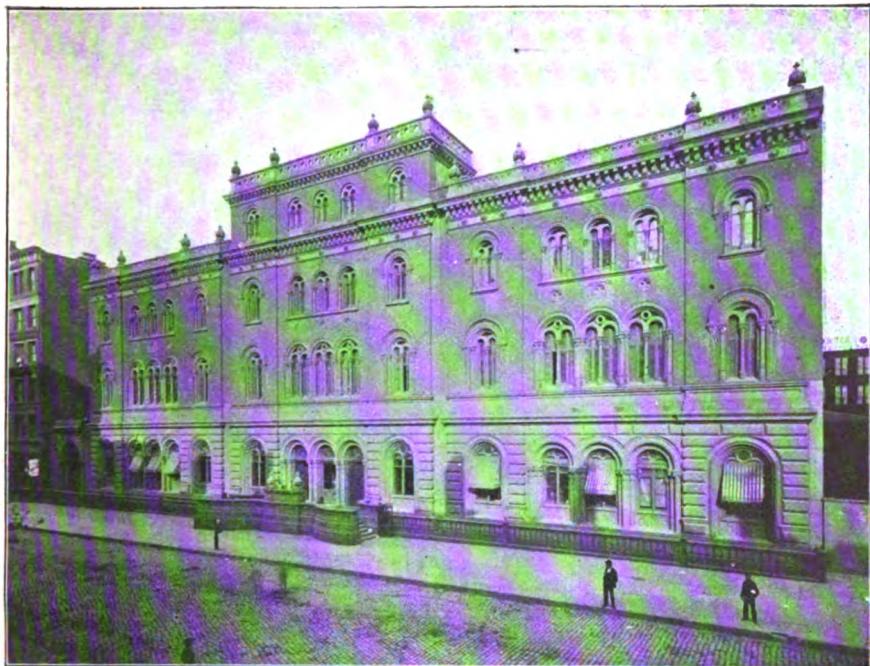
It may be said of the manufacturer as the "Journalist" says of the literary man and the physician, that if a manufacturer cannot get fair pay for his goods it is a pretty sure sign that he has taken his goods to the wrong market or that his goods are not wanted, and that he had better get out of the manufacturing business and seek some other field of usefulness.

So far as Dixon's products are concerned, we believe that if any of our customers will give them careful examination they will easily find them superior to any graphite goods offered.

In the matter of Dixon's Silica-Graphite Paint, we most positively know that to be the best graphite paint on the market. The reasons are self-evident when stated, but we have not space here to spare, and "That is another Story."

A BUSY RIVER.

More ships sail the Detroit river than enter Liverpool or London. The Suez canal which carries the commerce of the world, passed last year 8,500,000 tonnage, while there were floating through the locks of Sault St. Marie not less than 16,000,000 tons in eight months.



THE ASTOR LIBRARY.

The Astor Library was founded by John Jacob Astor. In August, 1836, he devised 400,000 dollars for a free public library to be located in Lafayette Place, New York City. The first library building was opened to the public in January, 1854. The first addition to that building was made in 1859. In 1881 the library was again enlarged by means of a donation from Wm. B. Astor of 500,000 dollars.

The section at the right of picture is the old and historical part and is associated with such men as Washington Irving, J. G. Cogswell, and others.

The library is built in the Byzantine style of architecture; it has a grand marble staircase, and in the vestibule are the busts of twelve famous historical men.

The library was originally intended for 70,000 volumes, but now it contains 600,000 and is adding thereto rapidly.

The endowment fund in 1889 was \$1,498,409.61 and has largely increased since. The plot of ground on which the library stands is 120 by 240 feet, and, considering its location, is worth a fortune in itself.

The roof contains 26,000 square feet of surface and is now protected from rust and wear by Dixon's Silica-Graphite Paint, which is known to have protected roofs and iron work, and made repainting unnecessary for periods of 10, 15 and 20 years and even longer. The other external iron work of the Astor Library has also been repainted under the careful supervision of its able officers, Supt. L. Ferris Lockwood and Chief Engineer Mr. Louis Alt.

MIRACLES.

It is said that the miracle of one age becomes a practical familiar working force of a succeeding age. The phenomena of electricity has been harnessed and made useful. Science is now advancing into the region of cause to such an extent, that many of the so-called "miracles" of past ages are paralleled either actually or theoretically. It is said that Tesla announces that he can send any conceivable weight through the air, from one place to another, simply by elevating it (by electrical power) to the electrical current that will carry it, and draw it down at the designated

point by electrical apparatus again. Marconi's wireless telegraphy, which only last summer was an almost incredible experiment illustrated by a four-miles' circuit on the Isle of Wight, is now being practically introduced for the world's service. Pollah, the famous electrical engineer of Vienna, succeeded in transmitting 60,000 words an hour by a new system of telegraphy; and at about the same time, in General Greely's office in Washington, 120,000 words an hour were transmitted. The inventors of this new system of sine-wave telegraphy are Professors Albert C. Crehore of Dartmouth College, and Col. George O. Squier, U. S. A.; their system is named the "Synchronograph."

Only a few years ago, for electrical resistance, electricians used German silver wire, or some other form of metal resistance. Now, where a high resistance is required, a graphite resistance rod is used. A small rod of only a fraction of an inch in diameter and a few inches long having the resistance of thousands of feet of copper wire or German silver wire. Graphite or some form of carbon promises to play a very important part in modern miracles.

EDUCATION BY OBSERVATION.

To visit and study the ten great cities of the world—New York, London, Paris, Brussels, Amsterdam, Berlin, Dresden, Vienna, Zurich and Milan, gives an education different from that obtained from professors and text books. In those ten cities of renown dwell sixteen million people not only, but the pick, the talent of the human race.

These ten places manage our globe. To walk their streets, see their architecture, talk with their people, visit their stores, their hotels, their libraries, their museums, their parks, their places of amusement, is to see the best of the human family, at work, at play, at rest.

JOHN A. WALKER.

THE "GEAR" OF A BICYCLE.

The "gear" of a bicycle depends on the relation or proportion of the sprocket wheels. If each has the same number of teeth then the wheel is said to be "geared level." If the front sprocket has double the number of teeth that the rear sprocket has, then the gear of the bicycle will be just double the diameter of the rear wheel.

To ascertain the gear of any bicycle multiply the diameter of the rear wheel in inches by the number of teeth in front sprocket and divide by the number of teeth in rear sprocket; the result will be the "gear" of the wheel.

To prevent the wear of chain and sprockets and to prevent rusting, use Dixon's Cycle Chain Graphite, or Dixon's Graphitoleo.

H. A. WARD, in describing "Four Australian Meteorites," in the *American Journal of Science*, mentions that two of the meteorites contained graphite. It may be very choice graphite, but we would like to match it with some of Dixon's.

LEAD PENCILS FOR SCHOOL AND OFFICE USE

If there is anything that may safely be said to be indispensable in office, shop, or for general use, it is the lead pencil.

In the olden times, when anything in the way of a lead pencil was most thankfully received, there was little, if anything, in the way of a choice, but at the present time lead pencils are made to fit all sorts of requirements and for all kinds of particular uses. There seems to have been during the last year or two a growing tendency for pencils with leads of large diameter. Expansion of leads has grown with expansion of the country, and the Dixon Company, always ready to furnish whatever its customers may want, has been prompt in meeting the demand.

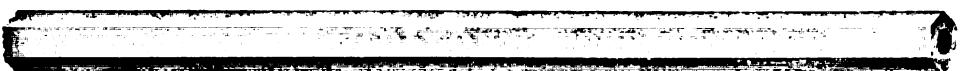
On this page we show some illustrations of lead pencils which please all who use them—and they are pencils which all first-class stationers keep in stock. We also show one or two forms of erasive rubbers, which we can most heartily recommend.



Combination of a Dixon "American Graphite" pencil with an improved and beautiful nickel tip and rubber. The tip serves equally well as an ornament or as a point protector.



Here is one of the popular taper shaped pencils, containing the finest quality of "American Graphite" leads. It is made in No. 2 and No. 3 grades of hardness of leads.



Dixon's "FOUR HUNDRED" is one of the large diameter, soft-lead pencils that travel over paper with an indescribable smoothness, proofing beyond question that it is a positive luxury and not labor to write with a Dixon pencil.



Dixon's "CARTERET" is a pencil that properly comes under the name "FOUR HUNDRED" in name and quality. Sales of this pencil during 1899 have increased to a surprising degree among the schools and business offices of the country.



Here is a pencil that is "DAINTY" in name and dainty in every particular—the very choicest and smoothest of leads, the finest quality of straight grained Florida cedar, pure gold stamping and nickel tip with highest grade of Dixon's velvet erasive rubber.



We show here Dixon's SOLID CRAYONS in holder and without holder. We sell them both ways. A holder lasts for a life time, and as for the crayons, ask any well equipped railroad or newspaper office, and you will be told there is nothing in the way of colored leads that equal Dixon's, whether in wood or solid.



We make a great many different forms and styles of ERASIVE RUBBERS—but the one shown herewith appeals to everyone that sees it. That is why we sell so very many of them.

Graphite

VOL. I.

OCTOBER, 1899.

No. 11.

Issued in the interest of Dixon's Graphite Productions, and for the purpose of establishing a better understanding in regard to the different forms of Graphite and their respective uses.

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SKETCH OF A TOUR. WHAT MR. AND MRS. JOHN A. WALKER SAW IN EUROPE THIS SUMMER.

The people who have been sight-seeing in Europe this year, scrambling over the Alps, sailing down the Rhine, and tasting the delights of London, Paris and Vienna, are returning home. Among those who have been fortunate enough to make the "grand tour" are Mr. John A. Walker, Vice-president of the Dixon Crucible Company, and Mrs. Walker, who by this time must know every hole and corner of the continent, so often have they visited it. Mr. Walker takes this trip annually for business aims, but manages to sandwich in a little pleasure, and being one who knows how to use his eyes sees a great many things of interest.

With a "News" representative the other day in his graphic way he sketched the tour he had made, which began in May last, when with Mrs. Walker he sailed to London, where Mrs. Walker attended the sessions of the International Congress of Women, held in the metropolis of the world from June 28 to July 5. The gathering of bright-minded women of every clime naturally made the session productive of much instruction and pleasure, and the Jersey City visitors enjoyed themselves hugely.

"We heard," said Mrs. Walker, speaking of it, "Mrs. Cynthia Westover Alden, the editress of the women's page in the "Tribune," make an interesting address which received much attention. The Duchess of Sutherland, a most beautiful and learned woman, presided. Her speech was bright and brainy. We had tickets on July 4 to the American banquet at the Hotel Cecil, where 600 guests were present.

"The president of the American Society presided, a man named Van Duser, but for the interest he added to the occasion he might just as well have been absent. Ambassador Choate spoke. Cardinal Vaughn, the English prelate in his ecclesiastical robes, made a very notable speech and whooped it up for the Americans in the Philippines. So also spoke the Master of Trinity College, Cambridge, and Mark Twain. Our great humorist made one of his inimitable droll speeches which convulsed that great audience. The galleries were crowded with ladies, and American sen-

timents were cheered to the echo. It was a brilliant gathering, and the speeches were of the highest order. The English always have a toastmaster. They never provide wine, but if you want it you can have it by ordering it."

This memorable experience in London, however, was enjoyed at the end of the trip and on the occasion of their return to London. After they landed from America they went to Paris, where Mr. Walker was engaged with the company's agent in the mysteries of business. Thence they proceeded to Brussels; more talks on graphite with the company's agent. In passing on the cars they could see the famous Lion mound on the field of Waterloo, but did not stop to roam over the great scene of the little Corporal's downfall. On to Amsterdam and then Berlin. Business for the company temporarily shelved and the visitors gave themselves up to sight-seeing in Germany's capital.

"Did you see the Kaiser?"

"Oh yes," replied Mr. Walker, "he rode past us."

"What do you think of the famous Unter den Linden?"

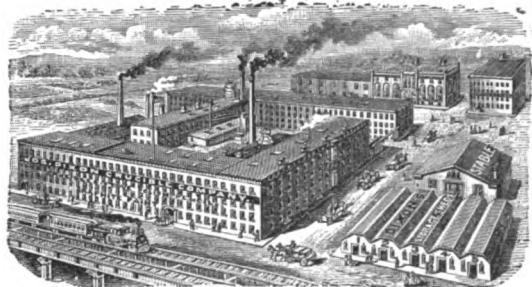
"A fake and a skin," was the prompt reply. "This much guide-book trumpeted avenue cannot be compared to the Avenue of Chestnuts in Brussels, which is four miles long and each tree in that avenue is a sample. When they are in bloom the sight is simply beauty alive."

From Berlin they went on to Dresden and Vienna, where they visited the Schoenbrunn Palace. Then to Italy via Innspruck, where they for the first time saw the stupendous grandeur of the mountains, guarding the approach to Italy. They took the St. Gothard road to Milan, passing the east end of Lake Lucerne, which lay bathed in sunshine and surrounded with mountains capped with eternal snow.

At Milan a halt was made and the travelers visited the great arcade alive with the busy hum of social and business life. Next day they visited Como, the pearl of Italy's lakes. The day was fine and they admired the villas and villages lining the sides of the lake, and were much interested in the manner of washing clothes in the lake by the villagers. Crossing the lake they reached Lake Lugano, and thence to the world famed Maggiore, down which they steamed in a blinding storm of rain. Arriving at Dom O'Dossala, the frontier town, Switzerland was before them. The Simplon pass was begun and a stop was made at the village of Simplon. It was cold, the thermometer registering 33°. The next day they finished the rest of the pass, visiting the Gorge of Gondo and its famous snow galleries and the village of Breig. Then on over the Furka Pass to the village of Gletsch, and an inspection of the Rhone glacier there.

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President. *Vice-Pres. and Treas.* *Secretary.*

JERSEY CITY, N. J., October 1899.

"Some enterprising fellow there," said Mr. Walker, "had cut a hole 125 feet in the ice, and we walked into the chamber thus made. It costs a franc to see it, and it was a wonderful sight, these walls of ice as blue as the sky. After that the big thing of our trip was to ride over the Grimsel Pass, towering up 8,000 or 9,000 feet high."

Mr. Walker eloquently described the wonders of the pass, how they zigzagged up the side of the mountain and crossed the saddle of the pass; how charmed they were with the huge walls of snow on each side of the roadway. It was a wild day, he said, and seated on the "banquette" seat of the diligence, amply protected from the rain, they experienced with exhilarating pleasure what a storm means in these mountainous regions. Passing through Meyringen, a typical Tyrolean village and the scene of the sad tragedy of Crown Prince Rudolph of Austria and the Baroness Vetsera, the travelers by rapid stages, journeyed to Paris, Dieppe and to London, where they visited the Women's Congress. Then home to Jersey City again with remembrances of a tour full of interest and enjoyment. *Jersey City News.*

IMPRINT PENCILS.

Imprint pencils are quite the fad these days and are made for sundry customers in 100 gross lots. Some buyers "kick" at the quantity required, forgetting that 100 gross, at, say \$3.50, only cost them \$350, and for this trifling sum they become to all intents and purposes pencil makers, with their brand on every pencil; whereas the Dixon Company, who really make them, had to spend \$750,000 to get buildings, equipment, etc., before one pencil could be made. Look at it this way, and the 100 gross don't seem large.

HARD TIMES AND EASY TIMES.

When the people get scared at the prospect of hard times, or an economical wave sweeps over the country and folks buy only the things that are absolutely necessary, then it is when we have hard times indeed.

When people are hopeful and have no fear of a scarcity of money or work and buy what they should have, and even some luxuries that they probably shouldn't have, then it is that we all have easy times.

Don't be too almighty economical, give away your old suit and buy another, with a new hat and shoes included, hire a team and take your best girl out riding. Do not above all things go beyond your income; save something, but live up-to-date and help make good times.

"Costly thy habit as thy purse can buy,
But not express'd in fancy, rich, not gaudy;
For the apparel oft proclaims the man;
And they in France, of the best rank and station,
Are more select and generous."

A GRAPHITE PENCIL'S SPEECH.

"Please, citizens of the world, take your hats off in my presence—you do me scant respect. Behold my make-up! Millions of years ago, in one part of America, my graphite part was made in fires so hot that the globe was then as the sun is now. Remote from the graphite mine, in Florida my wood part grew up into trees 50 to 60 feet high. The glue that holds my two halves together, is made from cattle hoof that roamed the Dakotas plains. My gold leaf stamp was once gold ore—possibly in the Klondike. The alcohol with which my colors were made was once corn on the western plains; the pigments themselves are gathered from continents across the ocean.

"The machine that cuts, carves and presses me into my present shape, are inventions of fertile human brains. All lands are under tribute to my composition, in me are the animal, the vegetable, the mineral kingdoms—and the wit of man has made the combination. So I come to you as a helper, a composite thing of the past and present—I bespeak more respect, and I am sold too cheap, my price should be higher."

J. A. W.

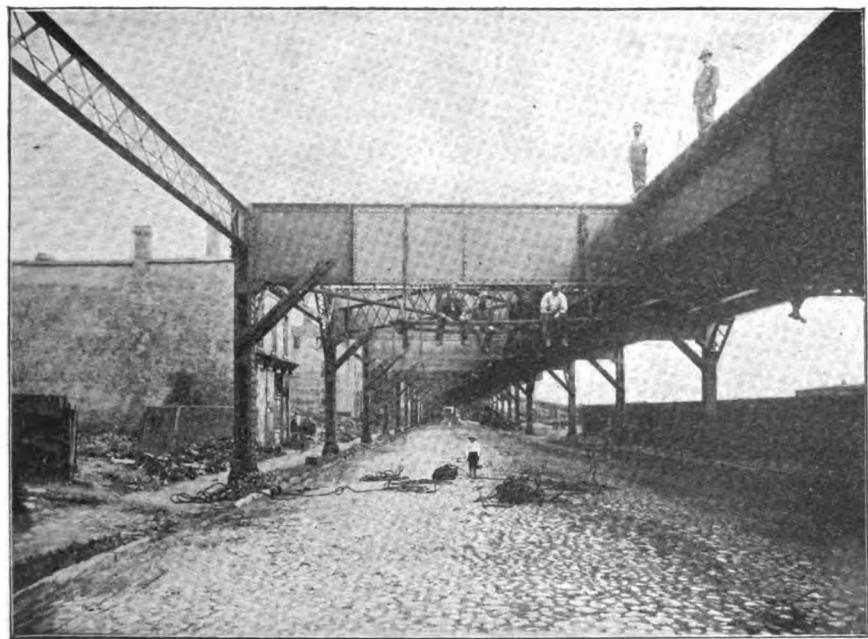
DIAMONDS FROM GRAPHITE.

Microscopic diamonds have been produced by stirring melted olivine with graphite. For the present however, we think our readers can safely continue to place their orders with Tiffany.

DURABILITY OF GRAPHITE PAINT.

The durability of graphite paint depends quite as much, possibly more, upon its texture and formation as upon its purity. A thin, tough flake graphite such as is used in Dixon's Silica Graphite Paint will adhere to metal surfaces as though glued there, while the granular form of graphite has little or no adhesiveness.

This is the simple reason why Dixon's Silica-Graphite Paint affords such perfect protection to all metal surfaces while so many other graphite or carbon paints fail. Surfaces painted with Dixon's Silica Graphite Paint have not required repainting in ten to fifteen years and even longer.



The above shows portion of the structure belonging to the Union Station, city of Detroit, Mich., painted with Dixon's Silica-Graphite Paint. The paint previously used did not protect the metal—it was a failure. Dixon's Silica-Graphite Paint was selected for the repainting, as it was shown that for durability and economy Dixon's Silica-Graphite Paint has by far the largest record and the best reputation.

There was a total of 225 gallons used to cover 121,500 square feet, averaging 544 square feet to the gallon. Part of the work was done with swabs and part consisted of lattice work. The entire work was done from a swinging scaffold which had a decided tendency to hamper the men. The painters declared they had never used graphite paint before that spread so well and covered so thoroughly, and the inspectors pronounced the result satisfactory in every way.

The fact that roofs and metal structures painted with Dixon's Silica-Graphite Paint have not required repainting in ten to twenty years, has made it very apparent that a properly prepared graphite paint is without an equal for durability and economy. Unfortunately, however, several graphite paints have now made their appearance on the market that have been used with unsatisfactory results.

We have all forms and kinds of graphite on hand, but use for our paint pigment only the tough flake graphite from the Ticonderoga mines. This is ground to an impalpable powder and then reground with pure linseed oil that has been fire-boiled. The result is an ideal paint for durability and economy.

A PROSPEROUS YEAR.

UNCLE SAM has balanced his books for the fiscal year of 1899 and the statistics of his business during the last twelve months tell an eloquent story of prosperity. He sold foreign nations \$1,227,443,425 worth of American products, and in return bought only \$697,077,388. This means that on the year's transactions the world at large owed the United States a balance of \$530,366,037, which must be paid in service of some sort, in gold and silver or in stocks, bonds and other articles of value.

BUSINESS FAILURES.

There were never so few business failures as now—the figure being about 170 failures per week, equal to 8500 per annum, or not much over one-third of one percent of the grand total, there being about 1,250,000 business houses of all kinds in the United States. This means that on the average this year 99½ business firms out of every 100 will pay and only two-thirds of one firm out of every 100 will fail. Again, the figures show that out of these 8500 failures about 7000, or 85% of all, are people who are in business with less than \$5000 capital.

It behooves a man to look to himself now, as in these booming times, if he fails, something must be the matter with his personality or business ability.

THE BIBLE AND EXPANSION.

A friend who is a strong expansionist and who always likes to find a biblical foundation for all he does or says, sends us the following:

"Enlarge the place of thy tent, and let them stretch forth the curtains of thine habitations; spare not, lengthen thy cords and strengthen thy stakes."—Isaiah 54, 2.

POT-LEAD.

Each year yachtsmen and small-boat owners are becoming better acquainted with the value of black-lead, called by some pot-lead, for the bottoms of their boats. It largely lessens friction, enabling the boat to go through the water much easier, and therefore much faster, with same power.

Dixon's "Pot-Lead" is well known to almost every yachtsman as it has been the winning factor in many a close yacht race. The "Puritan," the "Priscilla" and the other Yankee yachts were thoroughly "potleded" with Dixon's "Pot-Lead," and the "Columbia" will without doubt have her bottom coated with the same material, which is unapproachable for smoothness and "slickness."

NAMES AS IS NAMES.

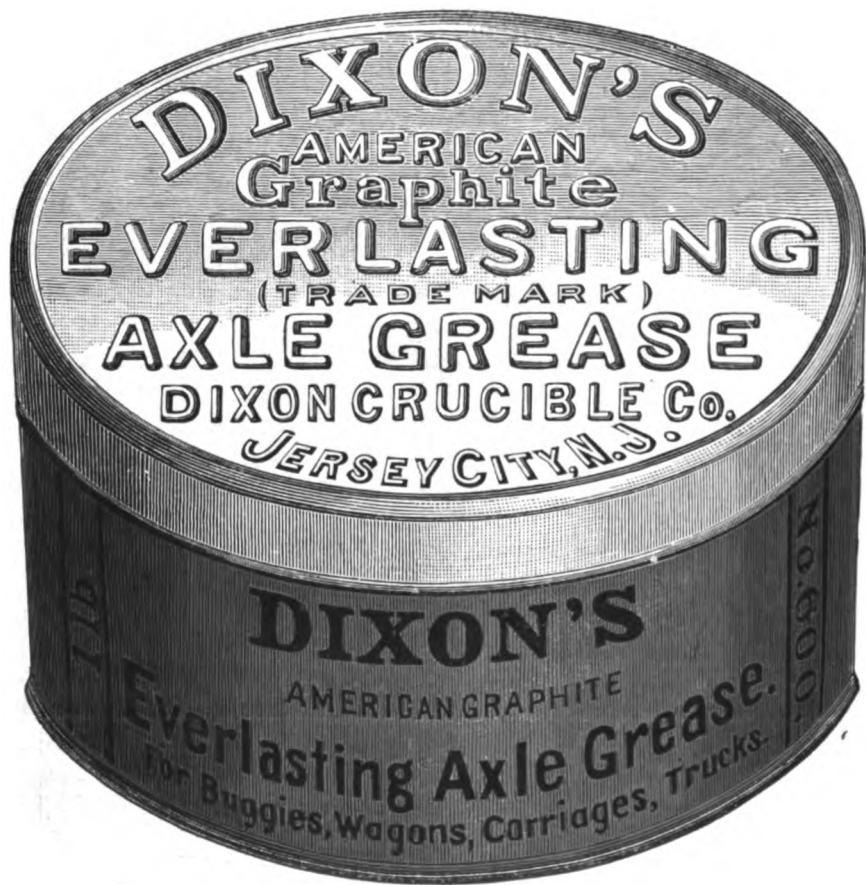
We who are so familiar with the easily remembered and easily pronounced names of Smith, Brown, Jones, etc., are considerably wobble-twisted when we run up against some of the East Indian names. We note the following in the Ceylon *Observer*:

THE PETTAH LIBRARY ANNUAL GENERAL MEETING.

The annual general meeting of the Pettah Library was held yesterday evening under the presidency of Mr. Advocate F. Darnborst, the others present being Dr. J. L. Vanderstraaten, Messrs. A. B. Claessen, R. B. Guneratna, A. C. Abeygunewardena, T. W. Goonewardena, D. D. Weerasinghe, A. P. Amarasinghe, F. Van Langenberg, F. A. Tisseevarasinghe and A. J. Wousersz, the secretary. We do not wonder that the Hon. Secretary omits the Christian names.

DIXON'S EVERLASTING AXLE GREASE.

THE GREASE THAT LASTS AND DOESN'T
RUN FROM THE HUBS.



The best of lubricating grease, mixed with Dixon's celebrated Ticonderoga Pure Flake Graphite. An ideal lubricant not only for wagon and truck axles, but for many other places. It is the cleanest and most economical lubricant one can use. Are you interested?

Graphite

VOL. I.

NOVEMBER, 1899.

No. 12.

Issued in the interest of Dixon's Graphite Productions, and for the purpose of establishing a better understanding in regard to the different forms of Graphite and their respective uses.

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PAINT DONT'S.

Don't put paint on a rusty or a dirty roof.

Use a steel brush or a stiff broom to clean the surfaces.

Don't expect one thick coat to answer as well as two thin coats.

A thick coat doesn't dry evenly or well. Brush the paint out well so as to make the coating even and thin, but not too thin. Then it will dry thoroughly and the second coating, if applied in same manner will cover all the hair line spaces left in putting on the first coating.

Don't use any oil but pure linseed oil. Up to date nothing better has been found than pure linseed oil, well seasoned.

Boiled oil is better than raw, if you are sure of getting genuine boiled oil. Boiling the oil rids it of much of the water and non-drying matter that is

found in raw oil.

Don't use driers if you use good boiled oil, nor even if you use raw oil, so long as the weather is dry.

A good dryer, about a gill to the gallon of paint, may be added if the weather is threatening or if you must have the paint dry quickly. Don't expect the paint to be durable if you burn out the oil with driers or turpentine.

Oil does not dry by evaporation. It takes up oxygen from the air and is slowly converted into a tough, elastic, leather-like substance of great durability.

Don't forget that surfaces properly painted with Dixon's Silica-Graphite Paint have not required repainting in ten to fifteen years and over. The Morgan Iron Works, New York City, have exposed iron structures at their factory that were painted over twenty years ago and they don't need repainting yet. Don't forget that all the long time records for durability for graphite paint have been made by Dixon's Silica-Graphite Paint. None of the imitations now in the market is old enough to "lift the cup."

COMMERCIAL MORALITY.

What about the ethics of settling for one's purchases, not as the goods were bought, but in some other exacting way? For instance, one buys goods f. o. b. the seller's depot, and when settling the buyer deducts the freight, saying: "It may go through," or, "Other sellers allow freight." Of

course, the seller not getting the remittance can refuse it, but it promises friction in the correspondence.

Again, one buys at a given price, and the agreement may be, if at the end of the season a given quantity is bought, a rebate is allowed, then in remitting each individual bill long before the rebate quantity is reached, deducting the rebate. Of course again, this can be refused, but again, it starts friction in the good relations. Why not settle everything exactly as bought, and do the "sparring for position" at buying time?

J. A. W.

LIFE IN BRUSSELS.

You are in Brussels, say over Sunday; you have a room at one of the leading hotels. You breakfast in solemn quiet, —a Brussels breakfast being a cup of coffee and a roll. At 10.30 you drop in at the Cathedral, St. Gudule's, by the way a most notable building, and see the swarming crowds coming and going all in sombre mood: the peal of the organ, the dignity of the building, the words of the preacher, all befit the occasion. Then comes luncheon time, but you take your luncheon, not at your hotel, but at a popular café, and out of doors, and for after luncheon coffee, adjourn to another café, again out of doors on the thoroughfare and in an hour and a half the whole city will file before you in gayest mood, in holiday attire, in carriage, or on foot: all motion, all excitement, all interested, and the expression of life at its most vivid mood. This for Sunday. Friday is Exchange day. Traders come in from the neighboring towns. The bourse is excited, crowded, but as soon empty as the dozen or more beer gardens in the vicinity have captured them to a man. They sit out of doors, make their bargains, finish their contracts, buy and sell. Here you see the business magnates all in one day, one sphere, one time. "It takes a stomach as well as business talent to succeed here," said one of them to me.

J. A. W.

A PROPHECY.

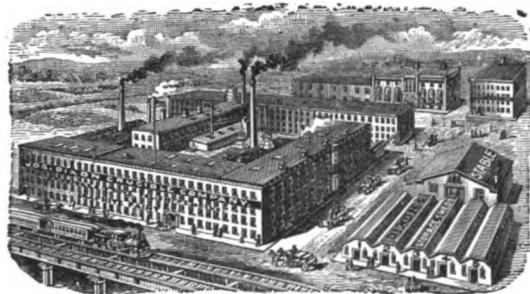
The following is an extract from a letter written in 1899 by Edward Atkinson to A. B. Farquar, of York, Pa.:

"Do you remember my prediction made ten years ago that the close of the century would find all existing furnaces incapable of supplying the demand for iron? Prices may be rushed to an extreme and react, but can be carried to no point that will prevent or seriously retard the accelerating demand for two or three years to come."

THIS ISSUE completes Vol. I of "GRAPHITE." We hope to do better hereafter. There is room for it.

ESTABLISHED 1827.

INCORPORATED 1868.



JOSEPH DIXON CRUCIBLE CO. JERSEY CITY, N. J., U. S. A.

SALESROOMS AT

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304 Market St., San Francisco. 28 Victoria St., London.

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OFFICERS:

E. F. C. YOUNG, JOHN A. WALKER, GEO. E. LONG,
President. *Vice-Pres. and Treas.* *Secretary.*

JERSEY CITY, N. J., November 1899.

NEWS FROM AFRICA.

Like our English cousins we have some unsettled matters in Africa. Sometime ago we received the following written on a postal card, and a little later on, the second communication.

8 Victoria Bridge, Cape Coast, July 25" 1899.

Dear Sir As I am intending to do a great business with you I should like you to send me assorted samples of your lead pencils. I suggested executing an order previous to the asking of the samples but I pause a moment simply because I doubt of the suitability and nicety of the goods to the african market awaiting reply

I remain yours truly

CUDJOE ACQUAH.

Evidently Cudjoe found some new doubts somewhere and so got his brother or his uncle to follow up the matter:

{ 124 St. Pauls Church Yard
Cape Coast, W. C. A. Sept. 8" 99

Dear Sir having seen your name and address from a certain paper that you are best lead pencil mfg in your city. And I therefore beg most respectfully of your favour to forward me for the same mail a packet of samples contain all various assortment pencils which you got on hand to me to show clients to induce my market to select some and send my orders. And I shall lose no time to remit you as soon as samples handed. And in so doing you shall be highly recommended. Yours,

G. B. AQUAH, c-o KYOFIE YARMIKYE

Like Cudjoe we "pause a moment" before sending the samples, although we have no doubt "of the suitability and

nicety of the goods to the african market." Our doubts are entirely confined to Cudjoe Acquah and Grand Bunco Acquah.

NEED OF MORE THAN ONE LANGUAGE.

It has been the practice of our Vice-President and General Manager, Mr. John A. Walker, to make annual trips to Europe in the interest of the Dixon products. He has repeatedly said that it is almost imperative for a man who desires to extend his commercial business to have the command of more than one language. He has said that it puts a man in an humiliating position to go to a German merchant, for instance, and, unable to speak the German language, find the German merchant able to speak the English language; or to go to a French merchant and have him say: "Ah, excuse me! so you don't speak French! Then I will speak to you in English." Fortunately for Mr. Walker he speaks German quite fluently, and can make his wants understood in the French language.

Mr. Walker's statement in regard to the necessity of a manufacturer or merchant being equipped with more than his mother-tongue, is endorsed by President Eliot of Yale College, who has lately said :

"For international commercial life in English speaking countries, a good knowledge of three languages besides English is desirable: namely, French, German and Spanish. A reading knowledge of the languages will ordinarily suffice for principals, but for traveling agents or agents resident abroad, a speaking knowledge of at least two of these languages is desirable."

LUBRICATING THE NORTH POLE.

Speaking of the Dixon enterprise, a witty friend said the other day, that if some daring navigator should be fortunate enough to reach the North Pole, no doubt the Dixon Company would see to it that he was provided with a box of Dixon's Lubricating Graphite, with which to lubricate the world's bearings at the North Pole, and if this should happen, where would we all go? For how could we manage to cling to this old world of ours if its speed should be accelerated? Wouldn't we all be thrown into empty space? The world travels at the Equator at the rate of 1,000 miles an hour, and if its speed should be doubled by means of this lubricating graphite, what might we not expect?

FOREIGN BUSINESS.

Four years ago the Dixon Company took a passing opportunity and sent a representative to England to represent us, Mr. George W. Wollaston, of Philadelphia. The sequel is a branch house now established at No. 28 Victoria Street, London, under Mr. Wollaston's management. Two years of good work was done in Great Britain with fine results, and in the third year, Vice-President and General Manager John A. Walker of the Dixon Company, joined Mr. Wollaston and the two made a tour of France, Germany, Austria, Saxony, Hungary, Switzerland, Holland, Belgium, Russia and Italy, placing in each country an exclusive agency. The fourth year, namely in 1899, Mr. Walker again joined Mr. Wollaston and again they made a tour of the agencies, strengthening the lines, until all the agencies are now not

only in good order, but working most enthusiastically in the interest of the Dixon products.

To supplement this work, the Dixon Company has now an exhibit at the Exporters' Exposition, now in full swing at Philadelphia. Delegates from Boards of Trade, partners in leading business houses in Australia, China, Japan, South America, Africa and Europe gather there daily.

The Dixon exhibit is in the main building, and has been remarked as unusually attractive: it shows in good form a very complete representation of the graphite industry in all its branches.

The Dixon manufactures are cosmopolitan; their use is not local or provincial. Wherever there is machinery, no matter what class it be, there you will find some of Dixon's Graphite Lubricants. Wherever there is an iron foundry, or a brass foundry, there you will find Dixon's Facings or Crucibles. Wherever there is a publisher, there you will find Dixon's Electrotyping Graphite, and wherever you find a counting house, or a school house, there you will find Dixon's "American Graphite" Pencils. Dixon's graphite products are indispensable, and are found in one form or another the entire world over.

J. A. W.

DIXON'S EPIGRAMMATIST.



There are many of our readers who will recognize this man. To those he will need no introduction. His initials are S. M. In the Dixon nomenclature SM means "Soft Medium," but this man is neither soft nor medium. He is a past master of crisp, witty, pointed and pithy expression. He is as clear and concise in business matters as he is in writing. He has a soft heart and a hard head, which is a most excellent combination for a salesman, as it enables him to establish closer and firmer relations with a customer and at the same time to sustain prices and, better yet, hold the respect of the buyer.

Such a man is Sam Mayer, the manager of Dixon's interests in Chicago and vicinity.

DIXON'S CHICAGO EXHIBIT.

The Dixon Company has been making an exhibit at the annual meeting of the American Street Railway Association, of its Graphited Wood Grease, Graphite Lubricants, Silica-Graphite Paint, and its many other articles used by railway companies. This exhibit has been under the management

of our New England representative, Mr. A. L. Haasis, who has been most ably aided by several of the bright young men of the Dixon staff.

Few of our Western friends are acquainted with the sedate and dignified Mr. Haasis, but they will no doubt easily recognize the other breezy young men mentioned in the letter which we have received from Mr. Sam Mayer, who is thoroughly known throughout the "Windy West."

"CHICAGO, Oct. 17, 1899.

Dixon Crucible Company, Jersey City, N. J.

SIRS:—The Dixon booth at the American Railway Convention is a thing of beauty and a joy beyond the telling. It is decorated with the national colors and the display is attractive and drawing.

In the rear of the tent, conveniently hidden by a curtain, may be found perhaps one of the most complete buffets east of the Rocky Mountains. There Mr. Haasis, Uncle Dudley Johnson, together with little Willie Allen and the Saint, dispense unlimited hospitality to the famished and thirsty. The glasses are of all sizes, and the bottles of different shapes and labels. For my own special benefit I have a syphon of seltzer, of which I partake sparingly. The "whole push" is busy, and I feel that we can take good care of the crowd and do justice to the Dixon goods.

For years I have been in the habit of rubbing down every morning with alcohol; this week I shall use it internally as well as externally, and by the end of the week I expect to be thoroughly preserved.

Yours truly,

SAM MAYER."

October 21st, we received the following telegram from the exuberant Sam Meyer:

"Convention closed in a blaze of glory. Bands playing, flags floating. As usual, Dixon in front, best exhibit and center of attraction. Rah for Dixon!"

SAM MAYER."

It looks very much as though the bottle of seltzer had been "sparingly" used.

Let us be up and "doing"
Everyone we can, and thus
We may keep them from pursuing
Clever plans for "doing" us.—*L.A. W. Bulletin.*



THIS IS THE MAN WHO THOUGHT SIR THOMAS LIPTON

WOULD "LIFT THE CUP."

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GOOD SELLERS. WINNERS WITH HANDS DOWN.

NEW LEADS

Everybody has noticed the unusually smooth and fine quality in the leads of Dixon Pencils the past year. The reason is the striking in the graphite mines new veins of extraordinary fine graphite. It is more smooth, has less grit than usual in the ore, and it works up tougher and stronger. Buy a dozen Dixon America Graphite Pencils for your desk and see if ever before you wrote with such extra good, smooth, tough leads.

DIXON'S GRAPHITE SM NO 2

Dixon's "American Geaphite," round and hexagon shape. Made in eight degrees of hardness. Leads are unequaled for smoothness and toughness.

DIXON'S BEST COLOR CRAYON

The colored Crayons stamped "DIXON'S BEST" are made by perfected machinery, are carefully selected and have a vividness and toughness unapproached by any other made.

DIXON'S GRAPHITE SKETCHING CRAYON 341

We believe this crayon is superior to anything in the market for the purpose.

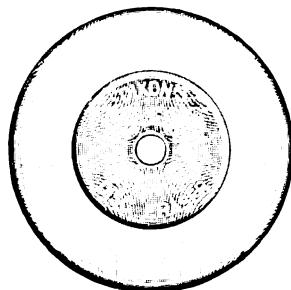
For fine lines Dixon's No. 219½ is recommended by every draughtsman who has tested it.

DIXON'S AMBASSADOR NO 2

A high grade, full length lead pencil, tapering in shape and very popular.

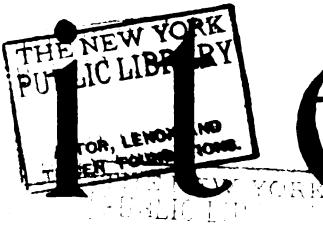
DIXON'S GRAPHITE STENOGRAPHER 490

The leads in these pencils possess a degree of strength and toughness not found in any other pencil, and owing to this peculiar toughness they retain their points in a most surprising manner. As they do not require sharpening frequently, they easily outlast any other pencil.



Here are the two favorites in Erasive Rubbers.

Graphite



VOL. II.

DECEMBER, 1899.

No. 1.

Issued in the interest of Dixon's Graphite Productions, and for the purpose of establishing a better understanding in regard to the different forms of Graphite and their respective uses.

COPYRIGHTED BY THE JOSEPH DIXON CRUCIBLE CO., JERSEY CITY, N. J.

THE CLEVELAND WINDOW GLASS COMPANY

is one of the best known concerns in the Central States as jobbers in plate glass, paints, varnishes, painters' supplies, etc. It brings together three distinct departments, each under a skillful and competent individual, and all under the general management of one company. Mr. F. H. Palmer is at the head of the paint department. He has made a very painstaking study of the chemical properties of paints—and his ably prepared papers and reports read before the national and Ohio State Paint, Oil and Varnish Associations have gained for him recognition as an authority on the subject.

Under Mr. Palmer's direction the company has established a special school for the instruction of its employees in all matters pertaining to paints, their composition, uses, etc. The school holds regular weekly sessions and besides having the benefit of frequent lectures by experts in various lines, the employees submit written answers to various questions given out a week in advance.

It is hoped that this policy will produce a staff of employees most of whom will become of exceptional value, both to the company and its patrons. Their ability as salesmen will be founded upon a knowledge of facts rather than upon their capacity for bluff.

The day of the talking-machine-salesman has gone by. The successful salesman of the present day must be a man, not only with the gift of gab, but with the ability to thoroughly and clearly explain, in technical language, if need be, and in plain language at all times, the nature and uses of his goods; the conditions under which they will succeed, and the conditions under which they may fail; their similarity to other goods, and their differences as well. He must know not only his own goods, but similar goods manufactured by others. He must know not only the strong points of his own goods, but the strong points of his competitors, and their weak ones as well.

A KANSAS PHILOSOPHER ON PORK.

In these days of pepsin chewing gum, health foods, bran coffee, acorn coffee, malt coffee, "no-to-bac" tobacco, non-alcoholic drinks, etc., and many of our young with what

they think is nervous prostration, the following from the "El Dorado Republican" comes in timely:

"No man who lives on meat was ever known to lick his wife or ask for a divorce. Adam got into a row, right off, because he had no hog meat, butter, or black bass. Napoleon lost Waterloo because the allied forces had bacon for breakfast the morning of the fight. The French had vegetable soup. The South had to give in at Appomattox because they were out of meat. War can't be successfully waged without hog meat."

Americans are the most frisky people on the earth, because they eat the most hog meat.

Ingalls would have gone back to the Senate had he not lived on oatmeal, baked apples, and blind robins.

A vegetable diet woman is as cold and clammy and unlovable as a turnip. If you wish to put roses in the cheeks of your girls, vitality in their every motion, and brains in their heads, feed them on meat.

If you want your boy to get a job and hold it, go to the front and amount to something, give him bacon, grease, ham, fat, or tallow, three times a day.

The world is full of cranks who are always getting up some new fad about hay soup or corn fodder tea."

If our young men will give up their tonics and cocktails and nostrums generally, confine themselves principally to meat and potatoes, with bread and butter, and wash it down with coffee and tea only, work hard and keep regular hours then they won't know anything about nervous prostration or insomnia.

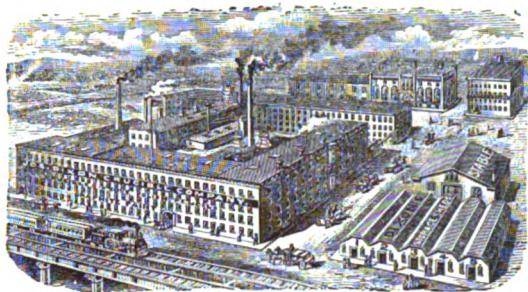
THE MAN OF "TO-MORROW."

Longfellow has said that "our unfinished tasks wait like mendicants at our gate." The procrastinating man expects to accomplish to-morrow the work of yesterday and wastes to-day in vague plans for the future, or allows himself to be turned from his work by callers or social pleasures. He has never felt the satisfaction of being abreast of his work or even of having his work well in hand. His desk is buried under an avalanche of unfinished business. He is reminded of something and wastes time in vainly looking for it. He puts off paying accounts as readily and easily as he puts off other matters, and as to paying accounts at the due date, that is an act he is never guilty of. He intends to be honest but delays the doing of it until it is too late. It seems to him that he is overwhelmed with business. He has, he complains, "no time to do anything." Not able to manage himself or his own affairs, he never becomes a successful manager of other men or the affairs of others.

—Business.

ESTABLISHED 1827.

INCORPORATED 1868.



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OFFICERS:

E. F. C. YOUNG, JOHN A. WALKER, GEO. E. LONG,
President. *Vice-Pres. and Treas.* *Secretary.*

JERSEY CITY, N. J., December 1899.

ARTIFICIAL GRAPHITE.

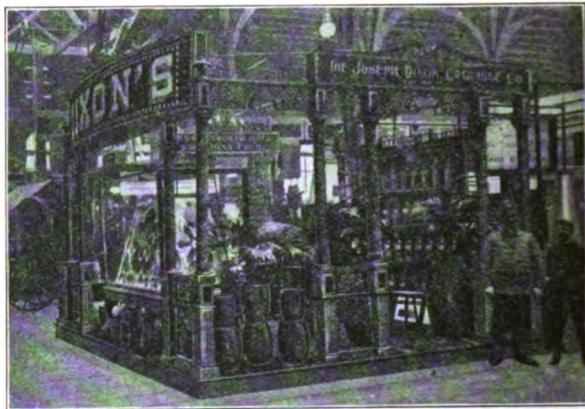
For the past few months we have heard considerable about artificial graphite, and its production in enormous quantities of a suitable kind for all the various purposes for which graphite is used. Our own representatives, as well as others, have asked us if we are making use of artificial graphite in any of our products; or if the artificial graphite is liable to take the place of that made by Dame Nature in her laboratories.

We have examined various samples of artificial graphite which have been submitted to us; so far we have found them of no use whatsoever for any of our products. It is quite as necessary to have graphite of a certain formation for certain work, as it is to have graphite of sufficient purity for such purposes. In other words, it is just as necessary to have graphite of a particular formation as it is to have graphite of a certain degree of purity for certain purposes. Steel and pure iron have but a slight difference in chemical make-up, but that difference is a tremendous factor in usefulness. We believe we are justified in expressing an opinion that it will be a long time before any artificial graphite can possibly take the place of nature's production. There are always enthusiasts and prophets to be found when anything new pops up. When gas was first put into practical use in 1805, it was predicted that lamps would at once be abandoned; yet many people still prefer lamps as their method of illumination; and the Standard Oil Company, probably the greatest corporation in existence, still makes millions each year out of the sale of kerosene oil. Twenty years ago, when electric lights were put on the market, the prophets saw the immediate

ruin of gas companies. This prophecy has been falsified, although the electric light business has grown to be one of immense importance. Still later, we have been told that acetylene gas is the greatest illuminator ever discovered, and that all others must go down before it. Undoubtedly acetylene gas has a future, but even the modest candle will still continue to be found, to say nothing of gas and electricity; and we believe it will be a great many years—if it ever does come—before artificial graphite will be used for lead pencils, for stove polish, for facings, for crucible making, and for the hundreds of purposes for which graphite is now used.

THE DIXON EXHIBIT AT THE EXPORTERS EXPOSITION AT PHILADELPHIA.

The Joseph Dixon Crucible Company, Jersey City, N. J., have a very handsome exhibit covering their well-known productions. Their display occupies a space equal to about 250 square feet, located at the corner of a prominent avenue in the main exhibition hall. The exhibit gained considerable prominence in the exposition from the fact that it was almost the first one to be completed and was among the very few in readiness on the opening day. The display is inclosed within an arcade structure of polished



cherry wood and the general arrangement reflects much credit upon the taste of the designers. On either side of the principal entrance is a large plumbago retort generally used for smelting silver, zinc and other metals, but now utilized as a vase and holding a pot of beautiful ferns. At each corner of the exhibit are large plumbago bowls and crucibles, also used as receptacles for potted ferns and plants. A glazed showcase of goodly proportions occupies almost the whole of one side of the space and contains a large assortment of lead pencils, office and school sundries. An attraction is presented in the shape of a monster lump of graphite brought from the Ceylon graphite mines and said to be the largest ever mined. It weighs 268 pounds and is displayed on a polished cherry pedestal. A showcase occupies another side of the space and on its shelves are seen a number of large glass jars containing graphite in various shapes and conditions of manufacture from the crude material to the finest product. An assortment of ordinary crucibles, brazing crucibles, boxes, phosphorizers and other articles made from plumbago are disposed in order around the sides of the exhibit. At the rear of the space is another showcase showing graphite materials for all known uses in electrical installation. On top of the case is a line of

mined in Baraga County, Mich. The following, taken from that Journal, was published January 1, 1898:

"There was produced in Baraga County, Mich., 100 tons in 1896 and 600 tons in 1897, of a carbonaceous material, which is ground for paint and is improperly called graphite. It is simply a carbonaceous shist extending over several thousands of acres, without sign of any vein of graphite. The quarry is situated in Sec. 33, T. 50 N. R. 33 W."

You say there are numerous cases where Superior Graphite Paint has perfectly protected metal surfaces for from 25 to 30 years. Now, as it is stated in the catalogue published by your company that "this mine was first opened about 1880, by the Baraga Graphite Mining Company" for producing foundry facings, isn't it a little bit curious how there can be "numerous cases" where Superior Graphite Paint has perfectly protected metal surfaces for from 25 to 30 years?

Nevertheless, for the benefit of those interested in getting the best protective paint, will you kindly mention a few of those "numerous cases?" It will help graphite paint in general and yours in particular. Furnish names and dates as we have in the case of the Morgan Iron Works mentioned above and, incidentally, you might explain by what process the paint was manufactured years before the mine was first opened. Possibly a Keely motor was used and the pigment drawn from the earth by "synthetical vibrations of the oscillating harmonics" and Father Time shoved back for the records. But we come back to your lecture again.

You say that "Superior Graphite Pigment has a large percentage of silica which gives it body and drying quality." Is it possible that you do not know that silica does not furnish body to a paint and that it is almost transparent when mixed with oil? And would it not have been well to explain to your audience how "silica gives good drying qualities," when you, only a moment before, said that it was "chemically neutral to oil?"

With a view evidently of getting in a blow wherever you can on flake graphite and without the least regard to facts, you say: "flake graphite is a very poor dryer, being worse even than pure carbon." As graphite is an inert substance, not affected by acids or alkalies, it cannot of course be either a good dryer or a bad dryer; no matter whether it is of flake formation or some other formation. It is the oil that does the drying, the same as it is the glue that does the sticking, no matter whether a piece of wood is flat or some other shape.

Tests covering many years have shown that flake graphite can be ground to a flour-like degree of fineness; and that the flake formation is not destroyed as is evidenced by the microscope; and that these minute flakes of graphite glued and cemented, as it were, together by the dried linseed oil, make the most elastic and durable protective coatings for wood or metal surfaces that it is possible to obtain.

We refer to Volume XXXIX of the "American Society of Civil Engineers," published June, 1898. We quote Mr. A. McC. Parker, M. Am. Soc. C. E., Page 30:

"In 1871 the Department of Docks constructed a very large floating derrick. The back stay of the tower was carried down to a very large cast-iron circle, about 45 ft. in diameter, which was bolted down through the hull of the scow to the keelson. The top of the circle was dished, so

that there was on top probably 35 or 40 receptacles in which water could lodge to a depth of 6 or 8 inches. The captain of the derrick, who had superintended its construction, painted this cast-iron circle with lubricating graphite, thinned down with kerosene oil. This was applied 26 years ago. It has received none since and to-day the scales of graphite can be rubbed off with the finger. Although it is out in the weather under the most adverse conditions, the iron is perfectly preserved."

That was flake graphite which you say "is useful for lubricating, but has not proven a success as a paint pigment," yet it preserved the iron perfectly for 26 years.

In May, 1899, the Dixon Silica-Graphite Paint was used to repaint 121,500 square feet of iron structure at the Union Station at Detroit. The paint previously used did not protect the metal, and it was a failure. We need not tell you what paint it was that proved a failure, but the structure which we mention is close to your factory windows, and you will have no difficulty in keeping tab on that job. We believe you will find Dixon's Silica-Graphite Paint all that we claim it to be and that it may serve as a constant lesson before you of the durability of flake graphite.

TO OUR READERS.

We should like to say further to our readers that within the last five years quite a large number of manufacturers of graphite paint have sprung up; sometimes manufacturing graphite paint only and again, the graphite paint has been manufactured by old and reliable houses—houses thoroughly well versed in all old-time paint pigments, but unfortunately not well versed in graphite as a paint pigment.

It is our belief, based on long years of experience, that of all the various forms of graphite, the one pre-eminently suited as a paint pigment, is the tough, durable flake graphite, found at Ticonderoga, N. Y. We have been manufacturing this paint for a number of years. The employees of the Dixon Company used it as a paint pigment at the mines, years before the Dixon Company put it on the market. The officers of the Dixon Company, learning from its employees the durability of this paint, decided to add it to their various graphite products, and have been manufacturing it and selling it for the past thirty years. As the Ticonderoga flake graphite costs more in its production than either the Ceylon graphite or the amorphous graphite, experiments were carefully made to see if other graphites did not have equal durability.

For a year or two, possibly longer, paints made of other forms of graphite seemed to answer quite as well, but Father Time soon demonstrated that for durability and consequent economy, no form of graphite equaled the Ticonderoga flake; therefore, every pound of Dixon's Silica-Graphite Paint is made of the Ticonderoga flake.

Silica is found with the graphite, but, as every miner knows, no ore runs uniform; therefore we add the silica or take it from the graphite as required.

The function of the silica is to act as a filler, and to furnish additional toughness to the graphite, the same as an alloy is put in gold when gold is used for jewelry—to give wearing quality.

To anyone interested in the subject of graphite paint, we shall be pleased to send descriptive pamphlet.

Open Letter to Mr. C. H. HOYT, of the Detroit Graphite Mfg. Co.,

From the Joseph Dixon Crucible Company, Jersey City, N. J.

Our attention was called to an article entitled, "Paints for Iron," published in the *Interstate Architect & Builder* of October 7. It was said to be a presentation of your views in a lecture delivered before the employees of the Cleveland Window Glass Co. In that article you were credited with having devoted much painstaking study and investigation to the subject.

As the Dixon Company are, strictly speaking, the only manufacturers of a flake graphite paint and as you seemed to go out of your way to speak against flake graphite as a paint pigment, we wrote a reply to your remarks and sent copy of it to the publisher of the *Interstate Architect & Builder*, who did not feel justified in printing it except "upon the same terms as Mr. Hoyt's article was published, to wit: 20 cents per line for the space and \$40.00 per 1,000 for extra copies, provided they are taken to the number of 3,000 or more." We declined and now print in full your comments on graphite paint and our reply and will add that our columns are open to you for the good of graphite paint and the instruction of those interested in graphite paint as a protective covering.

FROM MR. HOYT'S LECTURE.

"Graphite paint is to-day the leading paint for iron, and as its merits are becoming better understood its use is largely increasing. If properly made it is one of the best and cheapest paints to apply. It is perhaps one of the least understood pigments, and on that account is often improperly treated. It exists in distinct forms, the foliated or flake graphite and amorphous or graphite carbon. The flake graphite, while useful for pencils, stove polish, crucibles and lubricants, has not proven a success as a paint pigment either used alone or with artificial mixtures. The amorphous graphite comes from the mines intimately mixed with silica and other minerals in a form that can be ground very fine. This pigment is mined on an extensive scale in Northern Michigan and known as Superior Graphite. It is very uniform and is chemically neutral to oil or metal surfaces. The graphite has great waterproofing qualities, keeping the oil elastic and forming a thin layer over the oil when dry that protects it from decomposition. There are numerous cases where this paint has perfectly protected metal surfaces for from 25 to 30 years. This pigment has a large per cent. of silica which gives it body and good drying qualities with pure linseed oil, while the flake graphite is a very poor dryer, being worse even than pure carbon to mix so it will dry satisfactorily. The graphite paints properly made cost rather more than oxide per gallon, but the great covering capacity, being nearly twice that of oxide, makes it a very economical paint."

OUR REPLY.

We fully agree with you that graphite paint, if properly made, is one of the best and cheapest paints to apply, and that it is to-day the leading paint for iron; and as its merits are becoming better understood, its use is largely increas-

ing. You say that it is perhaps one of the least understood pigments, and on that account is often improperly treated. To prove this, you at once begin to improperly treat it. You say: "Graphite exists in different forms, the foliated or flake graphite and amorphous or graphite carbon."

This is not the language of a man who has made a study of either graphite or carbon. A man who lectures with a view of conveying reliable information, should be more definite and accurate.

Graphite occurs in various forms, and sometimes the various forms are associated together. The forms are foliated, flake, acicular and amorphous. The words foliated and flake have practically the same meaning, but the former is used to designate the thicker flakes so common in Ceylon graphite; while the word flake was chosen many years ago by the Dixon Company to more fitly describe the very thin flake graphite which, so far as we know, comes only from the Ticonderoga mines owned by the Dixon Company. The word amorphous, so far as graphite is concerned, is used chiefly in connection with German, Bavarian, and Mexican graphites. Your phrase: "amorphous or graphite carbon" must have been either a slip of the tongue or a typographical error, as that phrase is practically without sense or meaning.

You state that flake graphite has not proven a success as a paint pigment, either used alone or with artificial mixtures. It is difficult to understand what you can mean by "artificial mixtures."

Ticonderoga flake graphite has, however, been used as a paint pigment for over forty years and, so far as we can learn, Dixon's Silica-Graphite Paint—which is made of flake graphite—has made all the big records for durability; and in fact until within the last half dozen years or so, no other graphite paint was known or heard of. For one record, centrally located, and where the paint is still in good condition, we offer the following:

"NEW YORK CITY, October 25, 1899.

I take pleasure in saying that when the enclosure around the main boiler at these works was erected 30 years ago, we painted it with Dixon's Silica-Graphite Paint. Also that our 30-ton derrick, erected 22 years ago, was then painted with the same kind of paint. That neither have been repainted since and are still in good order, we think is sufficient evidence that the material was first-class.

Yours truly,
(Signed) WILLIAM H. RODMAN, Supt'g Engineer,
Morgan Iron Works,
Foot Ninth St., East River."

You speak of graphite mined on an extensive scale in northern Michigan and known as Superior Graphite, and as the catalogue of your company informs us that Superior Graphite comes from Baraga County, perhaps you will be interested in knowing what "*The Engineering and Mining Journal*" of New York has to say concerning graphite

crucibles in sizes running from jewelers' crucibles to the size known as No. 18. Near the desk of the representative in charge of the exhibit is a No. 225 crucible, which was used by the Ajax Metal Company for 34 heats and which appears to be in very good condition. Near the main entrance is a large glass jar containing a quantity of graphite put up in the various forms popular among dealers in bicycle sundries. At the south front of the exhibit and forming part of the arch is an electrically illuminated sign carrying the name "Dixon's."

For the above photograph and excellent notice we are indebted to the "Iron Age" of New York, to whom we extend our thanks.

JACK OF ALL TRADES.

A contemporary rightly says, the day of "Jack of all Trades" has gone by forever. There is no longer any room for him except possibly in some remote country place. In the big centers of industry, the trained, educated worker, who can do one thing better than anything else, is wanted.

As competition becomes more intense, the demand for specialists, for experience, increases. To be great, one must concentrate. Everywhere in the business and professional world, there is a standing demand for the man who can do one thing efficiently; not many things indifferently.

This age calls not for educated men merely; not for talented men; not for geniuses, but for men who know some one thing thoroughly and can do that one thing as well as it can be done. This age also calls for executors who can pick out such men and, without bothering themselves with the details, hold the men to their duties in a masterful fashion, so that each man fills his place and performs his part as perfectly as the strands in a mighty cable.

It is only on such lines that small industries can become great, and large industries hold their own.

SLIPPERY PLACES.

Of all the slippery places known, there is none so slippery as the one made so with graphite. Graphite is the best natural lubricant ever discovered by science or practice. Its smoothness and lubricating quality is absolutely without an equal.

Nothing can stick or squeak where Dixon's finely pulverized pure flake graphite is used—no matter whether it is the drawer of my lady's writing desk or the cylinder of a 500 H. P. Corliss engine.

Dixon's pure flake graphite is now well known in every civilized part of the world and is used for overcoming friction wherever found.

Pure graphite is never affected by heat or cold, acids or alkalies.

HOW WE GROW.

Our friends and customers who have visited the Dixon works have not failed to note the evidences of growth. Our factories cover 63 city lots. The old structures erected over 50 years ago are marked and seamed by time, but they

are still "in the ring." The age of the extra stories and additions can almost be told by the experienced eye. They show up around the works like grafts on an old tree.

During the past decade not a year has gone by without some addition to some part of the plant. We shall now begin the erection of a new addition to our pencil factory, 135x40 feet, four stories high. We are also considering the installation of a steam and electric plant to cost twenty-five to thirty thousand dollars.

HISTORY REPEATS ITSELF.

On April 11, 1859, forty years ago, we issued the following circular:

"We have advanced our prices on crucibles, and all shipments from date will be charged at the rate of 4c. per number, without reference to date of orders.

"We are reluctantly compelled to take this course by the continued high price of blacklead; it has steadily advanced during the past year and has now reached a price at which we cannot realize the cost of unmanufactured material, by selling crucibles at 3½c. per number.

JOSEPH DIXON & COMPANY."

On October 3 of the same year, we sent out the following circular:

"In consequence of further advance in the cost of materials we are compelled to advance the price of crucibles on and after this date. The price of our crucibles will invariably be 5c. per number.

JOSEPH DIXON & COMPANY."

In April, 1899, we stated in a circular:

"For reasons entirely beyond our control, the price of crucible plumbago ore commenced to advance and has reached to-day prices fully 250 per cent. above the normal figures. These prices are higher than they have been at any time in the last 27 years.

"So far we have stood these enormous advances alone and have not asked our customers to share them, but all prices for crucibles must now be declared off, and for the future we shall be governed by circumstances.

JOSEPH DIXON CRUCIBLE COMPANY."

In October, 1899, we were again obliged to advance the price of crucibles, and this time the advance has been beyond the advance of 40 years ago, as the price is now 6½ cts. per number instead of 5 cts. per number.

UNDER date of September 30 we received the following from our representatives at Johannesburg, South Africa:

"Business all over South Africa is at a complete standstill. Martial law may be declared at any moment. After the declaration of martial law communication with the outside world will be stopped entirely, so you may not hear from us for some time."

The business of the Dixon Company reaches every civilized portion of the globe, and what concerns foreign countries, no matter in what part of the world, usually concerns the Dixon Company. If it is war, Dixon suffers; if it is peace and prosperity, the Dixon Company benefits by it.

Our Vice-President's Department

IT'S THE SAME DIXON.

Too often to make us feel good, we hear some one say, "I didn't know it was the same Dixon that made crucibles that makes pencils;" or, "I didn't know it was the same Dixon, whom we have known for over half a century as making Dixon's Carburet of Iron Stove Polish, that makes Dixon's American Graphite Pencils." Yet, be it once more announced, it is the same Dixon Company. We have a unique industry—its duplicate does not exist on the earth—we make everything of which graphite (sometimes called plumbago and sometimes black lead) is an ingredient, viz: Dixon Crucibles, Dixon Stove Polish, Dixon Pencils, Dixon Paint, Dixon Flake Graphite, Dixon Electric Resistance Rods; in short our list of products includes one hundred different things, all made of graphite and all made by the same Dixon. We are the pioneers, the fathers of the graphite industry.

HAND VERSUS MACHINE LABOR.

In 1850 by hand-looms carpet was made, four hours per yard; to-day, by machine, one-half hour per yard. One plow is made in four hours by machine; by hand-work it took about 118 hours.

This is why, although paying much higher wages, American manufacturers are able to compete with the foreign market.

LITERARY.

Andrew Lang, the foremost literary man and writer of books in England, says: "The public does not care for literary style; for the music of Milton's verse; the aerial raptures of Shelley; the inimitable felicities of Stevenson," and so forth. He then continues: "The business man reads nothing but trash." On behalf of the business man we would like to say, he tosses aside much of well-written stuff, because it is mere words; lovely words, it's true, but mere words. A leading American writer of fiction, W. D. Howells, has achieved by native gifts and assiduous practice, a marvellous style: it is clear, clean cut, full of beauty, plus some strength; but he tells you nothing. He has the gift of expression, but nothing to say. Henry James, another of the same breed, has also an almost perfect style; but even less of a message if possible than Howells. His expression is marvellous; his ideas, his thought puerile. Andrew Lang is of the same class—can say it superb—but he has no message. When nature will contrive a man with these great gifts of literary expression and endow him at the same time with something to say, we promise, on behalf of the business men, attentive readers.



JOHN A. WALKER,
VICE-PRESIDENT AND GENERAL MANAGER
JOSEPH DIXON CRUCIBLE CO.

LITERARY NOTICES.

JOHN M. FORBES, "Letters and Recollections." —Edited by Sarah F. Hughes.

It is not often a literary production bears in business, but the life of John M. Forbes ought to be in the hands and well thumbed by every ambitious young business man.

It is the life and career of one of America's foremost money makers. His attractive personality, his large grasp of affairs, his great success, are so well described as to be our inspiration.

A FIRM recently advertised for a traveling salesman to canvass in Europe. They stipulated that applicants must both write and speak English, German, and French. Not one per cent. of the replies came from American-born citizens.

Recapitulated and summarized, the returns of the industrial census show, for the 1,957 concerns reporting their business for March, 1895, and March, 1899, as follows:

Number of hands employed:

March, 1895, 191,732½.

March, 1899, 267,486½.

Gain for March, 1899, 39.56%.

Amount of wages paid:

March, 1895, \$6,398,044.53.

March, 1899, \$9,859,280.38.

Gain for March, 1899, 54.09%.

Average wages per capita:

March, 1895, \$33.36.

March, 1899, \$36.86.

Gain for March, 1899, 10.49%.

The old song used to be "There's a Good Time Coming, Boys." But it's come—we are in it.

TWENTY blast furnaces in Germany were supplied for 200 years from cinders left by the great Roman iron works.

DIXON HOT FOR EXPANSION.

Whether we were for expansion or not before, we don't know; as the darkey said: "Bin too bizzy to tend to politics." But now the die is cast and we are thick and thin expansionists. Why? Well, last Saturday's mail brought Dixon five different orders from Manila for Dixon's Graphite Pencils, Graphite Crucibles, and Dixon's Graphite Lubricants. Now we are glad Dewey went there, glad he sank the Spanish galleons, glad somebody gave him a house, sorry he bothered what some old women thought about his disposition of it, and glad of anything that will promote trade with the east. The "open door" will swing easier if the hinges are lubricated with Dixon's Graphite.

Graphite

VOL. II.

JANUARY, 1900.

No. 2.

Issued in the interest of Dixon's Graphite Productions, and for the purpose of establishing a better understanding in regard to the different forms of Graphite and their respective uses.

COPYRIGHTED BY THE JOSEPH DIXON CRUCIBLE CO., JERSEY CITY, N. J.

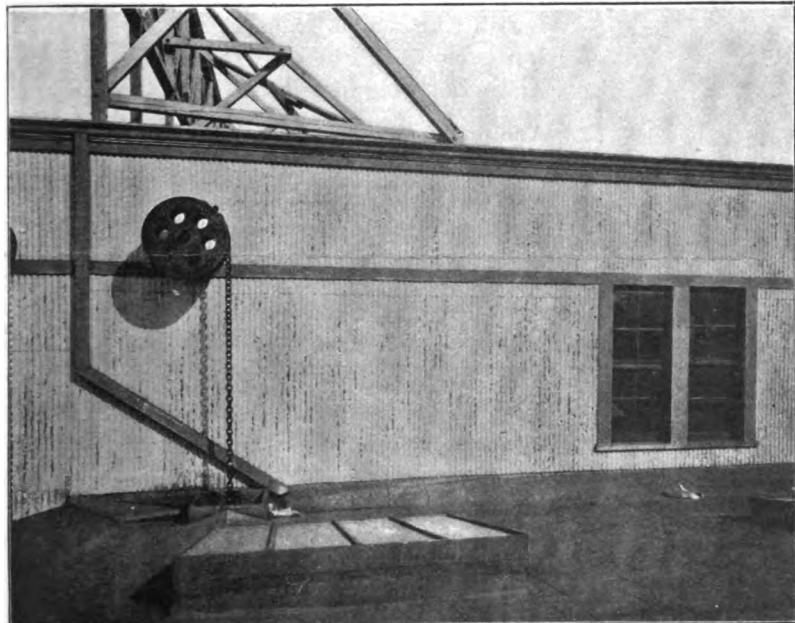
GALVANIZED IRONWORK.

The illustration but poorly shows the cracked and blistered condition of paint on the galvanized iron work of a railroad pier, along the North River, New York harbor, painted two years ago with two coats of red lead, and two coats of lead in colors for decorative effect.

In striking comparison is the excellent and perfect condition of paint on the galvanized iron work of immense freight pier No. 37, of the Southern Pacific Railroad Company, New York Harbor, painted four years ago with Dixon's Silica Graphite Paint.

Attention is called to a letter from the well known firm of painting contractors, Messrs. T. W. Leake Company, who did the work.

The letter runs thus:



Jersey City, Nov. 21, 1899.

JOSEPH DIXON CRUCIBLE Co.

Gentlemen:—Replying to your favor will say that we have used Dixon's Silica-Graphite Paint for years and always found it very satisfactory.

We used it for the Southern Pacific Pier No. 37, New

York City, about four years ago, and it is still in excellent condition.

Yours truly,

T. W. LEAKE COMPANY.

Exhaustive experiments and practical tests of Dixon's Silica-Graphite Paint for the protection of galvanized iron work, along the sea-coast, in the South and North, has proven it is the most durable protective coating for this class of work, and the pier owner and consulting engineer will do well to consider that the use of this paint on galvanized iron work will be a *money saver*, as the structure is not only saved from corrosion, but the expense of repainting every two or three years is overcome. The cost of the labor in painting and repainting is twice the cost of the material, and regardless of the initial cost of a paint, the most durable is unquestionably the most economical.

The Ticonderoga flake graphite pigment is absolutely inert and unaffected by any degree of heat or cold, climatic changes, or destructive chemical agencies, and the minute flakes give greater elasticity and flexibility to the coating and better protect the binding material from destruction than amorphous or granular pigments. The Joseph Dixon Crucible Company use for a vehicle in the manufacture of this paint the very purest fire-boiled linseed oil on the market, and there has yet to be discovered a binding material that gives as tough, elastic and durable service as pure, unadulterated fire-boiled linseed oil.

A particularly interesting case where Dixon's Silica-Graphite Paint has proven its superiority over lead, metallic, asphaltum and composition paints, is shown in the following letter of the Interior Elevator Co., Minneapolis, Minn.:

Minneapolis, Minn., Dec. 7, 1899.
JOSEPH DIXON CRUCIBLE Co.

Gentlemen:—Yours of the 1st inst. received. We believe Dixon's Silica-Graphite Paint to be the best paint in use for painting iron covered buildings. We have tested it by painting our elevators and in making comparative tests with several (three other) highly recommended roofing paints, and we find that the Dixon Silica-Graphite Paint is the most durable, having the best body and the best appearance after being on the elevators nearly three years; and we find they are to-day apparently in as good a condition as they were when first painted.

Yours truly,

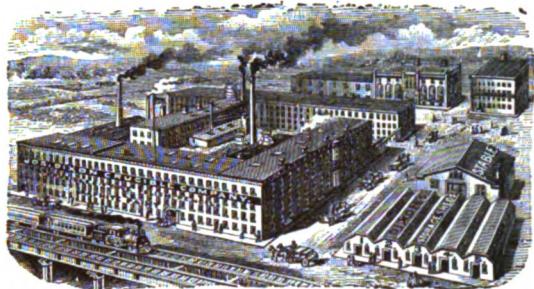
B. H. MORGAN, Manager.

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ESTABLISHED 1827.

INCORPORATED 1868.

MISUNDERSTANDINGS.



JOSEPH DIXON CRUCIBLE CO. JERSEY CITY, N. J., U. S. A.

SALESROOMS AT

68 Reade St., New-York. 38 North 4th St., Philadelphia.
304 Market St., San Francisco. 28 Victoria St., London.

RESIDENT REPRESENTATIVES:

BOSTON. CHICAGO. ST. LOUIS. PITTSBURGH.
PARIS. HAMBURG. VIENNA.

GRAPHITE MINES AND MILLS AT TICONDEROGA, N. Y.
CEDAR MILLS AT CRYSTAL RIVER, FLA.

OFFICERS:

E. F. C. YOUNG, JOHN A. WALKER, GEO. E. LONG,
President. *Vice-Pres. and Treas.* *Secretary.*

JERSEY CITY, N. J., January 1900.

GREETING

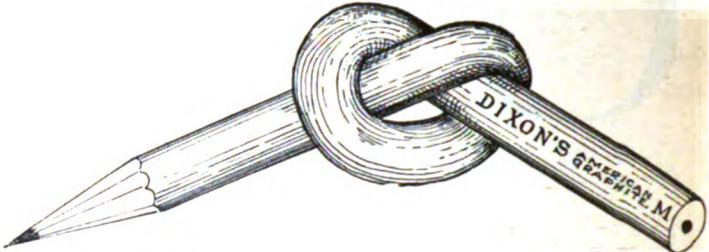
To our readers we wish a

VERY HAPPY AND PROSPEROUS
NEW YEAR!

—happy in all that health, contentment and the rational enjoyment of life brings; prosperous in an activity of business, without undue tiresomeness—but in the satisfaction of steady accumulation of profits, and the comforts of money making.

The outlook seems promising from the standpoint of our own business, as the year has closed with abundant orders left to be filled, and no indication that customers have had an opportunity to commence attempting the replacing of depleted stock. The constant call for goods with which to fill orders, prompts our prediction of more than ordinary good business for a long time to come.

We take this occasion to wish ourselves a Happy and Prosperous New Year—and shall take every opportunity to bring about such a desirable result, by prompt attention to orders, by careful attention to quality of goods, and by increasing our factory facilities.



We recently used the above cut in an advertisement in a leading school journal, which read about as follows: "You cannot tie a Dixon pencil into a knot, but by using a Dixon you can readily untie some of the hard knots in the problems which constantly arise in school work."

In reply we have received requests for samples of Dixon's "knotted" pencils.

Another advertisement showed a cut of a school bag; the wording stating that "no school bag is complete without containing an assortment of Dixon's 'American Graphite' pencils."

In response we have had scores of requests for Dixon's school bags.

A postal card request for a sample of Dixon's "freezing" graphite was recently received; also for a price on Dixon's "snow-white" graphite.

Dixon's lubricating "lumbago" is often called for.

DRUMMER'S LITTLE GIRL.

My papa is a traveling man.
Some people call him "drummer,"
He goes away in August, and
Gets home again next Smimmer.

I don't know my papa very well—
I wish I knew him better;
But every week I take my pen
And write a big long letter.

And mama says some day he'll come
(I thought I would have fainted)
And she will keep him in the house
Until we get acquainted.

Now ain't that funny, don't you think?
It gives me lots of bother;
To think a great big girl like me
Don't really know her father.

I don't know really how to act,
Of course he'll have to "Miss" me,
But goodness gracious! it won't do
To let a strange man kiss me.

And when he first comes in the house
I won't know how to greet him;
I guess I'll call him "Mr. Papa"
And say I'm pleased to meet him.

Oh, papa! it's plaguey mean to have
One's papa for a drummer;
I wish he'd come in Autumn and
Stay Winter, Spring and Summer.

Contributed by MR. JOHN A. CONDIT.

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NOTICE OF REMOVAL.

We take pleasure in announcing the removal of our Philadelphia Salesroom to a more convenient and desirable location, No. 1020 Arch Street.

JOSEPH DIXON CRUCIBLE CO.

HULLAHBALOO!

TOM HOOD.

There's a music aloft in the air
As if cherubs were humming a song,
Now it's high, now it's low, here and there,
There's a harmony floating along!
While the steeples are loud in their joy
To the tune of the bells' ring-a-ding,
Let us chime in a peal, one and all,
For we all should be able to sing

Hullahbaloo!

We may not have a Happy New Year,
Be perplex'd by all possible ills—
Find the bread and the meat very dear,
And be troubled with very hard bills—
Yet like linnets, cock-robins and wrens,
Larks, and nightingales joyous in spring,
Or the finches saluting their hens,
Sure all should be able to sing

Hullahbaloo!

Oh! no matter how wretched we be,
How ill-lodged, or ill-clad, or ill-fed,
And with only one tile for a roof,
That we carry about on the head:
We may croak with a very bad cold,
Or a throat that's as dry as a ling,—
There's the street or the stage for us all,
For we all shall be able to sing,

Hullahbaloo!

ADVANCE IN PRICES.

July 28, 1899, some slight advances in pencil prices were made.

September 6, 1899, some further advances were made.

December 6, 1899, some new prices were again made.

The reason for these advances is the increased cost of everything used in pencil making, such as cedar wood, graphite, glue, coloring pigments, rubber, paper boxes, wooden packing boxes, etc.

All pencil catalogues now sent out contain insets, showing the changes in prices.

A PAPER FOR BEGGARS.

"La Belle France," the nation so often alluded to as one of the most prosperous in the world, is also, strange to say, the greatest country for professional beggars. There are regularly organized bands of beggars in each of the leading cities, and in Paris they are so numerous (and, shall I say, prosperous?) that a regular trade organ, known as the *Mendicant's Journal*, is published there.

The *Journal* is of particular use to the begging fraternity in keeping it thoroughly well informed as to the movements of

society people about the watering places in summer. Most of the professional beggars are very clever impostors, and make a good living by soliciting alms from the well-to-do tourists and travelers.

Some of the advertisements in the *Mendicant's Journal* are particularly entertaining, and cannot fail to interest Americans. Here are a few of them, taken at random from a large batch:

"Wanted at once, for seaside resort, a pair of helpless cripples. Good business for six months sure. References given and required."

"Deaf and dumb man, or woman, wanted for good stand near a fashionable church. One who can play the hand-organ preferred. No singing needed. Good wages, or will share with right party."

"Respectable, sober woman wanted with baby in arms. Must be a good walker. Good paying neighborhood. Sick-ness cause of advertiser needing substitute."

We can imagine what kind of a reception such ads. as the above would receive if published in an American newspaper.

JOHN BRENNAN in "*Fame*."

HOW TO BUY GRAPHITE PAINT.

Best results will be secured by insisting on having Dixon's Silica-Graphite Paint delivered to building site in sealed packages, *ready mixed for use*, by the Joseph Dixon Crucible Company, Jersey City, N. J.; applying different coats of the several colors, so as to allow of easy inspection and insure the proper number of coats of paint. Have surface of metal thoroughly cleaned of all rust, grease and foreign matter, and instruct the painters to brush the paint out well and not apply too thick, and where two coats are applied allow first coat to dry thoroughly before application of second coat.

We are weekly in receipt of many interesting letters from our representatives and customers all over the world, telling of the durability of the paint under different and unusually severe conditions of service, and we shall be glad to give information relative to its use under conditions and climates similar to those that exist in the vicinity of inquiry.

WHAT IS WORTH WHILE.

To live content with small means;
Too seek elegance rather than luxury,
Refinement rather than fashion;
To be worthy, not simply respectable;
And wealthy, not simply rich;
To study hard, think quietly,
Talk gently, act frankly;
To listen with open heart to birds and stars,
To babes and sages;
To bear all cheerfully, do all bravely;
Await occasions, never hurry—
In a word, to let the spiritual life
Grow up through and above the common—
That is my "symphony of life."

W. E. CHANNING.

All this will be easier if the fellow uses Dixon's pencils.

J. A. W.

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Our Vice-President's Department

A WORD ABOUT JERSEY CITY, N. J.

Most of our readers see Jersey City first, from the car windows, and the present approach to our town is not enchanting; yet a second look would disclose a proof that "appearances is deceitful."

In Indian times the "Lenni Lenape" lived here. The first white man was Verrezano, an Italian, who came in 1524, and later the celebrated Hendrick Hudson came in 1609. From that time until to-day, very steady and constant has been Jersey City's progress.

Our City Hall site and buildings are better, easily, than anything in New York or Brooklyn, or than anything within ninety miles of Jersey City.

The finest driving boulevard in the whole United States is here. It is eighty feet wide, stretches fourteen miles long and skirts most of the way the superb New York Bay, Newark Bay and the magnificent Hudson.

We are now building what will be the finest Free Public Library building in America, except the Congressional and the Boston.

Our next census will show over 200,000 population, about 100 churches, four or five theatres.

In the Dixon Co. the city has the largest graphite industry in the world; also here is one of the greatest tobacco works, and one of the mammoth soap industries.

We have three banks noted for big surplus accounts; one big Trust and Guarantee Co., with surplus more than double its capital; one Industrial Life Insurance Co., the Colonial of America, which has broken all records in growth and progress.

It is a fine residence city, and full of elaborately laid out streets with asphalt pavement and lovely houses.

Clubs abound, both for men and women. Mosquito insinuations are heard, but don't believe them, at least the "skeeters" are quiet in Winter.

Come and see us at the Dixon office next time you are in our vicinity.

CRUCIBLE PRICES.

To readers of Graphite who are either the users of crucibles or dealers in them, there is little cheerful to tell about prices, in fact the indications point to still higher figures.

The Graphite from which they are made comes from the island of Ceylon, in the East Indies. In the Indian Ocean the monsoons have set in, bringing deluging rains every day. The rains fill the ore-pits and handicap mining, and minimize the output. These rains will not be over till the first of April.

Prices in Ceylon stiffened last week, and advanced several points.

A HINT.

Everybody has a pencil in his pocket—take yours out and look at the stamp. If it reads Dixon's "American

Graphite" S M, whether round or hexagon shape, all right; if not, send out and get such a one. The leads in these pencils—we mean the "American Graphite" S M—are simply superb, strong, tough, black, yet smoother than silk, smoother than finest velvet. They write superbly; they make writing a pleasure. It's fun to mark with them, they are so agreeable to the touch.

Take your pencil out and look at the stamp, if not a Dixon S M, send out and buy one; you won't regret it.

FAILURES.

In these days of boom and prosperity it is melancholy to talk of failures; but they bear on the new Bankrupt Law.

Its first year has expired, and disclosed many interesting facts. 22,000 petitions have been filed. This is as many firms as fail in three average years. The debts of the 22,000 are \$356,000,000 and the assets only \$38,000,000, viz., \$10.00 debts to \$1.00 assets.

In 10,000 cases out of 22,000 there were no assets at all. Dividends from the total assets were less than one-half of one per cent. This discloses a lamentable state of affairs where 22,000 fail, and 10,000 out of the 22,000 show no assets whatever; where the debts are \$10.00 to \$1.00 of assets; where the final outcome is one-half of one per cent. in the way of dividends. It means the letting loose on the business community of 22,000 bankrupts who knew so little about business management and business morals as to fail so disastrously. Coming back to business lines again it means that this number, two per cent. of the total of all merchants and business men of the United States, will be free once again to hoodoo the public.

WELL ACKNOWLEDGED.

Mr. Archibald P. Head, of London, says in a recent contribution to the *London Engineering*:

"It is generally conceded that the average American is more ingenious in shaping means to ends than the average European. This feeling is echoed by such phrases which one often hears in Europe, as 'Yankee cuteness' and 'Yankee dodges.' The American takes his view unhampered by previous traditions; Europe has for centuries looked at things from the reverse standpoint."

WAS HE?

A Dixon customer in Frogtown let his account run behind. We wrote and no reply; we then sent a draft. The draft was returned unpaid, and then came a letter saying he would remit soon; that he had used his cash discounting holiday purchases. We ask in reply whether he was not discounting other bills with Dixon money. Was he?

Graphite

VOL. II.

FEBRUARY, 1900.

No. 3.

Issued in the interest of Dixon's Graphite Productions, and for the purpose of establishing a better understanding in regard to the different forms of Graphite and their respective uses.

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THE MOST FAMILIAR MINERAL.

Our readers will naturally jump to the conclusion that we are going to say graphite. In fact, when one bears in mind that every civilized man, woman and child on the face of the earth uses graphite in some form or other, we might be excused if we were to claim that graphite is the best known mineral. Professor Loomis, however, says,—and we will not attempt to dispute him—that water is the mineral that we are most familiar with.

Professor Loomis says: "Water is a mineral—a fused mineral. You will find it described as such along with quartz, and topaz, and the diamonds, in books on mineralogy, or in treatises on stones.

"We usually think of minerals as solid things; such as metals, rocks, precious stones, and various chemical salts; but when we consider the matter a little, we see that all these things, if melted by strong heat, are minerals still, only they are now in a fluid instead of a solid state. The difference between these minerals and water is that water gets fluid at a lower temperature than they do, and, like quicksilver, stays melted at ordinary living heat. But, in those old ice ages which, one after another, have swept over the Northern and now over the Southern Hemisphere, bringing ruin and desolation, the natural and common condition of water was that of a solid ice, as it largely is to-day out of doors in winter when not kept fused by the stored-up heat of the soil and rocks, or melted by the sun.

BRIDGE PAINTING.

The subject of bridge painting is certainly one of equal interest to county commissioners, city officials, and railway corporations. A paint that is of handsome appearance and great durability is one to be most earnestly desired.

The Chelsea Bridge Viaduct, Mystic Wharf, Charleston, Mass., belonging to the Boston & Maine Railroad Company, was painted with Dixon's Silica-Graphite Paint in August, 1894, and Mr. J. P. Snow, Bridge Engineer of the Boston & Maine Railroad, advised us on January 6th, when we had the pleasure of meeting him, that the paint is still in

good condition, and the structure will not require repainting for a year or more.

The bridges over North Street, Holyoke Street and Main Street on the Boston & Maine Railroad of Northampton, Mass., were painted with Dixon's Silica-Graphite Paint in 1897, and a personal inspection in December, 1899, shows that the paint is in perfect condition and looks as fresh as when new.

The Baltimore Street Bridge, Baltimore, Md., erected by the Edgemere Bridge Works in February, 1893, and at that time painted with Dixon's Silica-Graphite Paint, has not since been repainted, and an inspection made of it in November, 1899, showed the paint to be in most excellent condition.

When it is remembered that these bridges are exposed to sulphurous smoke, as well as to storms of all kinds, the economy and durability of Dixon's Silica-Graphite Paint are plainly seen.

HE RESIGNS.

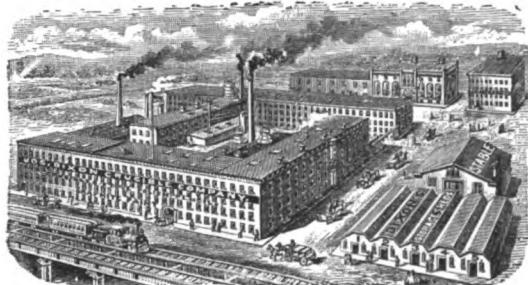
Mr. R. L. Whitton, who has represented the Dixon Company in the interest of Silica-Graphite Paint for railway structures, has resigned.



He could not tell a lie—we can, but won't.
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ESTABLISHED 1827.

INCORPORATED 1868.



JOSEPH DIXON CRUCIBLE CO.

JERSEY CITY, N. J., U. S. A.

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304 Market St., San Francisco. 28 Victoria St., London.

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OFFICERS:

E. F. C. YOUNG, JOHN A. WALKER, GEO. E. LONG,
President. *Vice-Pres. and Treas.* *Secretary.*

JERSEY CITY, N. J., February 1900.

METHODIZE.

We are told that the poet Gray said of himself that he had not the method of making a fortune. In other words it is not genius or talent alone that insures success in life from a monetary point of view.

A short time ago we visited a nicely appointed machine shop the owner of which confessed a paying business. We weren't selling any of Dixon's productions, but we thought it not out of place to do a little missionary work if possible, so we ventured with a, "Do you use graphite in any form?" "Well I guess I do, and Dixon's graphite at that," was the quick reply. "Would you mind telling us where and how you use it, and what benefit you derive from it, if any?" was our next inquiry. "Certainly not, glad to do it; it's the best thing for all around use that I know of. Come this way." We followed him to the engine room. He said, "Now look here, do you see that little hand-oil-pump on the steam pipe? Well, since I put that on I haven't used the sight feed lubricator once. I have an open-top can here in which I have a mixture of good cylinder oil and Dixon's Finely Pulverized Graphite. You see it's about like 'lasses in summer. Of course, the graphite settles—it's bound to, that's why I keep this little stick in it—to stir it up. I don't know just how much power I save, but I do know that some time ago, before I began to use graphite, the engine used to grunt and groan, when I put that big lathe on, in spite of lots of oil, but now the engine works easily and smoothly, and I wouldn't be afraid to put on another machine or two, although I am pretty well filled up here."

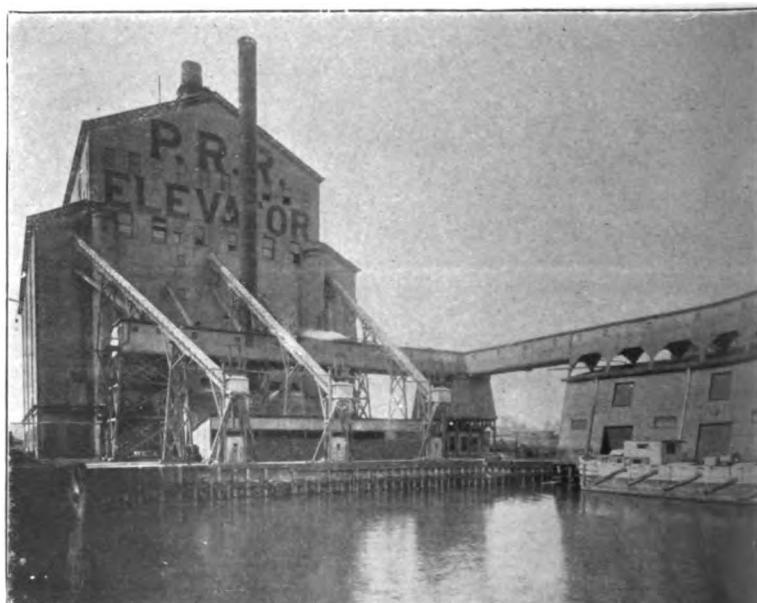
"Right here let me say that I not only save power, but I save oil as well. Probably I save power also by using that Dixon Belt Dressing. I got in the habit every Saturday night of cleaning all the belts. I run the engine slowly, brush off all the dirt on the belts, if there is any, and apply the belt dressing with a brush or swab. I see that the dressing is put on evenly, and by Monday morning the belts have absorbed the dressing in a great measure, and I don't know what it is to buy a new belt."

"But to return to graphite again. I use it on all my gaskets and flanges, so I don't have to buy new ones once where some of my neighbors buy half a dozen times. Then again, you know that there are pipes and joints in every shop and engine room that have to be changed or opened. I used to use Dixon's Graphite mixed with oil, in place of red lead, and it saved me many a dollar, as the joints could be opened with very little trouble, but Dixon's prepared Pipe Joint Compound is so much better than any mixture that I made, that I use that now."

This was not all that this machinist said about graphite, but it will do to "point a moral to adorn a tale." This same successful machinist pointed with pride to his labor-saving machines and to the various contrivances for bettering his work, and for increasing his output. Nothing escaped his attention. His men knew it. They knew also they couldn't fool him. They didn't attempt to. He is increasing his plant and making money. Some day he will be rich. He will deserve it.

A DURABLE PAINT FOR TIN ROOFS.

A familiar sight in crossing the Jersey City Ferries from New York is the mammoth grain elevator and freight piers of the Pennsylvania Railroad Company. Clouds of smoke



from the elevator stack, tugs, freight engines and factories nearby, almost constantly surround and cover the elevator.

The tin roofs of these structures were painted with Dixon's Silica Graphite Paint No. 2, four years ago, and the officials in charge of the painting inform us that the paint is still in good condition and has proved the most

durable and satisfactory paint for exposed metal work that they have ever used.

Considering the full exposure to salt air, heat of the summer's sun, storms of winter and dust and sulphurous conditions that obtain on this elevator building, it is a severe and practical demonstration of the great durability of Dixon's Silica-Graphite Paint.

It has been our aim for thirty years to produce the most durable protective coating for tin and metal surfaces that could be manufactured. The Ticonderoga Flake Graphite is the most expensive form of graphite mined in the world. The fire-boiled linseed oil which is used as the vehicle in the manufacture of this paint, is the very purest and best obtainable. It is bought direct from the manufacturers and subjected to our chemist's analysis, its quality is assured. Dixon's Graphite Paint is sold at a standard price and manufactured in but *one grade*, and a trial will convince the most skeptical that it is indeed more economical and superior to metallic or composition roof paints.

An interesting illustration of the elasticity, flexibility and durability of Dixon's Silica Graphite Paint is shown on steel rolling doors of the P. R. R. Freight Pier No. 29, New York harbor. These doors are raised and lowered daily and Dixon's Silica-Graphite Paint applied four years ago has perfectly protected the metal and is in an unbroken condition at this time.

We weekly receive letters from the most prominent and reliable manufacturing companies in the United States, testifying to the durability of Dixon's Paint, and the following letter is from one of the many competent authorities on the paint subject, we are able to quote:

BALTIMORE, MD., October 25th, 1899.

Joseph Dixon Crucible Company.

GENTLEMEN:—

We would say in reply to yours of the 23d, that Dixon's Silica-Graphite Paint has given entire satisfaction. We used it on the roof about five years ago and it is in good condition yet.

Very truly yours,

CLOTHWORTHY CHEMICAL COMPANY.

We have many interesting facts and shall be glad to send information to any one interested in a durable paint for tin roofs and iron work.

THERE ARE OTHERS.

Straightforward writing is so rare an accomplishment that we hasten to extend the hand of welcome to it wherever it is found. The most recent shining specimen of literary directness which we have lighted upon is a letter addressed by an Australian partisan to the politician whom he assisted to eminence, but who, on reaching his high estate, forgot the poor man on whose shoulders he had risen. The Australian wrote as follows:

"Deer Sur: You're a dam fraud, and you know it. I don't care a rap for the billet or the muny either, but you could hav got it for me if you wasn't as mean as muk. Two pound a week ain't eny moar to me than 40 shillin's is to you, but I objekt to bein' maid an infurnil fool of. Soon after you was elected by my hard workin', a feller here wanted to bet me that You wouldn't be in the House moren

a week before you maid a ass of yourself. I bet him a Cow on that as i thort you was worth it then. After i got Your Note sayin' you deklined to ackt in the matter i driv the Cow over to the Feller's place an' tole him he had won her.

"That's orl i got by howlin' meself Hoarse for you on pole day, an' months befoar. You not only hurt a man's Pride but you injur him in Bizness. I believe you think you'll get in agen. I don't. An' what I don't think is of moar Konsequence then you imagin. I beleave you take a pleshir in cuttin' your best frends, but wate till the clouds roll by an' they'll cut you—just behind the Ear, where the butcher cut the pig. Yure no man. An' i don't think yure much of a demercrat either. Go to hel. I lower meself ritin to a skunk, even tho I med him a member of Parlement."

This, it seems to us, is what Matthew Arnold, called a serviceable prose style.—(*London Globe.*)

IS IT EVER GOOD BUSINESS TO LIE?

In selling goods a pupil of the kindergarten ought to know it is never good business to lie, but in this case it is not the seller but the buyer to whom we refer.

Suppose a buyer is paying for an article \$1.00 and he tells a salesman trying to sell him the same article that he is paying 90 cents for it. A lie. The salesman reports the fact to his house; his house knows \$1.00 was almost cost, concludes their competitors are putting in goods of an inferior quality, fix the quality of their own goods to meet this imaginary competition, with, of course, plenty of margin to spare, and quote 85 cents.

The buyer thinks he is "a whole lot" when it comes to smartness and buys what he thinks is worth \$1.00 for 85 cents. In reality he formerly bought a dollar's worth for a dollar, and by lying he succeeded in buying about sixty cents worth for eighty-five cents.

And we never saw it otherwise.—(*Supplies.*)

THE TWENTIETH CENTURY.

One of the bright young men of the Dixon family wrote us on the last day of the old year, "to-morrow we begin a new century and I shall do my best for the interests of the Dixon Company." We know he will whether his "to-morrow" began a new century or whether he will have to wait until January 1, 1901. With this exception the Dixon family agree that the new century begins January 1, 1901. To those who do not agree with us we say, a truce on the question. We wish one and all a very happy new year. The year will go all too quickly—probably even before we shall have filled some of our back orders—and we shall all be twentieth-centuryites whether we believe that Katy did or Katy didn't.

The questions whether to use a high speed or a low speed engine; or the direct current or the alternating current for our motors and generators, or of what material the big stack of our new power plant shall be, have bothered us a great deal more than when the new century starts. One thing we do know, and that is, that when the new century gets fairly under way it will show a magnificent graphite industry here in Jersey City that will be a credit and a glory to American enterprise and hard work.

Our Vice-President's Department

WHY DON'T THEY GET ON?

The bureau-of-information-man in blank depot of blank road—one of the great roads—yawned and said: "No show for an ambitious man in this position; no chance to advance." I asked him for information as to how to buy my ticket for Crystal, Fla. He didn't know, and, getting out the Plant System book, he couldn't find out.

First, it was December 30th, and he passed out a November book; all out of tune, as a December book was out changing many time tables.

Next, he was dumb about sleeper accommodations.

Finally, he wound up by saying: "I guess you know more about this than I do."

This was the man who yawned and said: "No show in my position for an ambitious man."

He cussed his "luck," cussed Carnegie, and Rockefeller for having "money to burn." "Them fellers," he said, "had a show" and more to same intent. He is a twentieth century illustration of the New Testament, first century parable of the talents: "I know thee, Lord, that thou wert a hard master, austere. Take your old talent,—a little bureau of information job is no place in which to get recognition." Then the Lord took it, and possibly will give it to Carnegie or Rockefeller, saying: "He will improve it; for to him that hath shall be given, and to him that hath not, shall be taken away, even that which he hath."

LITERATURE AND LEAD PENCILS.

Among the readers of "Graphite" are many stationers and book sellers, and they at least know of the writings of Henry D. Thoreau. Thoreau is an American classic, full of individuality unlike anyone else. He is the associate of Emerson, Lowell, and Hawthorne, and lived in the same town. His half dozen books seem to survive and do not flinch before the cruel advance of time. When "David Harum" is forgotten, Thoreau's "Life at Walden" will be on every bookshelf. Now this same Thoreau made lead pencils; we have one before us. It is a plain cedar, warped, knot-holed, and stamped: "J. Thoreau & Son, Concord, Mass." He, Henry D., was the son. He was a crank, no money maker, always poor, and when his pencils were first made, his neighbors said: "Now Henry's poverty will cease." But no; having made pencils he dropped the work saying: "I cannot afford to waste time in doing over and over again the same thing." Thus the "Thoreau" pencils came and disappeared as quickly.

If Henry could drop into a modern pencil factory like Dixon's for instance, and see the advance in the industry; see the marvellous modern machinery; the hundred and one new processes; the new, unrivalled results, displacing warped and knot-hole pencils with perfection like Dixon's "American Graphite," he even might say: "Guess I would not have wasted even my time had I persevered." Thoreau made those pencils in 1842. Joseph Dixon, our honored founder, made plain cedars still earlier.

"DARKEY SERENADE."

One of the incidents of the Vice-President's visit to the Cedar Camp is his annual serenade. The musical darkies get out their guitars and banjos, and rehearse their camp meeting tunes, and for two hours the roof nearly comes off. After a dozen hymn tunes, the Vice-President called for "The Cat Came Back," and only three gave it; the rest said, "they had joined the church during the year and conscience would not permit so worldly a song." "Tis too bad," said one of the white party, "when they do other things so much worse." "No," said the Vice-President, "whatever standards conscience sets us, even if false standards, stick to your conscience." So "The Cat Came Back" had only two singers with banjo accompaniment.

By the way, this annual serenade is nearly as expensive as a night at the Opera; also, by the way, the "conscience darkies," who were silent, grinned as the song went on easily enough to make up.

FLORIDA PENCIL CEDAR.

Florida still holds the palm for pencil cedar. Its superb quality still holds out, but its quantity is slowly disappearing. Dixon's "American Graphite" Pencils are the only ones that are still made of Florida cedar, and soon even the Dixon people will have to seek other fields. Mr. John A. Walker, the Vice-President and General Manager of the Dixon Company, has just returned from his annual visit to the mammoth plant of the Dixon Company, and this is his outlook.

Florida oranges are also almost a thing of the past. The big frosts of some five years ago, killed nearly all the trees, and each succeeding year has brought fatal frosts. When there last week, the mercury was several days eighteen degrees Fahrenheit—fourteen degrees below freezing point.

To go to the Dixon cedar mill on his annual visit took Mr. Walker eighty-four hours of car riding there and back to obtain a twenty hours' conference with Mr. Clifford E. Herrick, the Dixon cedar "boss." Still Dixon says, from the cedar wood standpoint, "Florida forever."

OH! OH!

If the Vice-President comes back from his "Annual" to the Dixon Cedar Camp without a "swelled head", it must be owing to his inextinguishable modesty. His coming to the Camp is the event of the year. I forgot my coat, one afternoon, and a darkey brought it to the office saying how proud he felt to carry the coat of "the biggest man on the soil of Florida." I blushed as I remembered I was only five feet four, and weighed only one hundred and thirty five pounds. It cost only a quarter, however. This year I was dubbed the "big wheel." The little wheels had all broken records in 1899, and now the "big wheel" had arrived, he was whooped up. Dixon treats all its "little wheels" all right, as many of them have been going around under the Dixon management for fifteen to eighteen years.

Graphite

THE NEW YORK
PUBLICATION
ASTOR, LENORE AND
TILDEN FOUNDATIONS

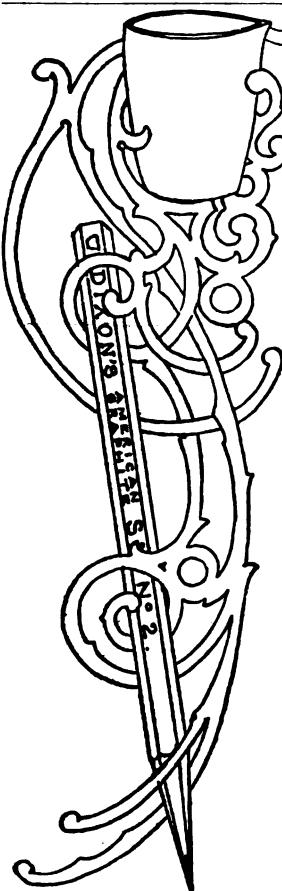
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THE SENSE OF TOUCH.

Graphite as lubricant has been slowly coming to the front for a good many years, says *The American Machinist*. It appears to have not only the quality of making surfaces slip easily by and over one another, but appears to fill up holes, as it were, making a rather solid surface when no surface exists. When a mechanic desires to judge the quality of a lubricant, there appears to be nothing so natural as to lubricate the ball of the thumb and the forefinger and then rub them together. This may not be scientific, but he gets very good results from his conclusions and is not likely to give up the practice. One reason for this is probably in the fact that a great deal of unclassified education of the mechanic has to do with the thumb and

forefinger. He transfers sizes and does a thousand things from their sense of touch. If you take a pinch of graphite between these members you will very readily see how easily one slips over the other even under considerable pressure, and this, to the mechanic, means absence of friction, and has a good deal to do with the growing favor with which graphite is received as a lubricant.

GRAPHITE FOR RUBBER GASKETS.

A writer in *Power* says: "A rubber gasket is good enough for me with some graphite rubbed on both sides when first put upon a joint. I find the best results are obtainable when I mix in a little cylinder oil,—just enough to make it sticky,—using water to thin it afterwards,—as oil is bad for rubber on joints where there is heat. I have used one on a man-hole plate, removing and replacing it every ten days, which has lasted for two and a half years, and it was as good as ever when it accidentally got broken. Inside the shell, where it comes in contact, you will find it clean and smooth, no scraper or anything being required to clean it."

STREET NAMES IN MEXICO.

According to *Modern Mexico* the street names of Mexico are something really appalling to the new comer. For instance there is the Heart of Jesus Street, and the Street of the Holy Ghost; Ave Maria Street and the Avenue of the Love of God. Others are the Street of the Saint of the True Cross, the Arches of Bethlehem, and the Graves of Saint Sunday Street; the Bridge of Saint Peter and Saint Paul, and the street of The Crosses of Sorrow. Not only are the names of the streets unusual, but they are often in the most incongruous locations. For instance, if you walk down Jesus Street, and continue in the second block, you will be startled to find that you are then on the Street of the New Slaughter House. The Alley of the Egg and Potato Street are just as likely to be the prolongation of the Back of Saint Teresa Street as any other. The Street of the Seven Princes may no longer be inhabited by royalty, but the Avenue of Illustrious Men was named for real persons. The street of the Lost Child derived its name from a popular tradition, but the Avenue of the Fifth of May was named for a famous battle with the French. There are the Street of the Little Bird, Street of the Fish, Bull Street and Goat Street, and streets of the Flies, Rats and Roosters. Then there are the streets named for various tradesmen, as the streets of the Hatters, Tobacconists, Coachmen, Milk-men, etc. One short block glories in the name of the Street of the False Entrance of Saint Andrew. The alley of the Little Candle Shop, the Street of Heads, Street of a Thousand Wonders, the Square of the Thief, are other oddities. It is not recorded exactly as to whether Sad Indian Street and the Street of Crazy People were named after those who endeavored to learn all the street names of the City of Mexico, but if you at least feel inclined to swear after trying it yourself you should first go over to Devil Street.

WHAT SHE LACKED.

There are bachelors on the Dixon staff of salesmen. One of them, who likes fun, said to the young lady in charge of the salesmen's memorandums:

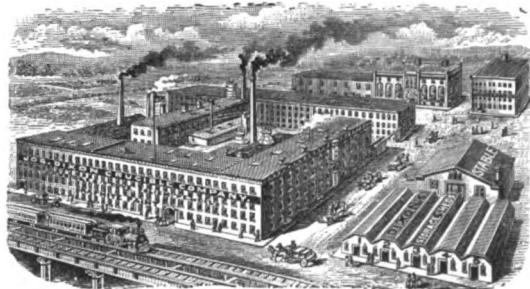
"Do you know that man has a perfect organ of speech?" "Well," she sharply replied, "so has woman." "Oh, no, she hasn't," came the quick reply, "her's is made without stops."

He pocketed his memorandum and left before she fully recovered, but he is not forgotten, and there is a new memorandum in his box.



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INCORPORATED 1868.



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OFFICERS:

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President. *Vice Pres. and Treas.* *Secretary.*

JERSEY CITY, N. J., March 1900.

SENTIMENT IN BUSINESS LETTERS.

We are often told that there is no sentiment to be found now in American business letters. We quote the following as evidence to the contrary. We had in our letter, from some cause we do not recall, said that here in the city the old-time quiet Sunday had almost disappeared.

In his answering letter our correspondent said: "Your allusion to the 'old-time Sunday' awakes longing memories in my heart. The desecration of the Sabbath (more properly the Lord's Day, as that is its name among Christians, commemorating the day that Christ arose from the grave, the Sabbath being the Jewish name for the seventh day of the week) is a matter due to the foreign element, especially the German, and one of the duties of all true Americans is to safeguard that day from desecration. It is the one day of the week that the worker has deeded to him, whereon no employer can force him to labor, and without its rest the workman, whether of office, bench, field or what not, would go to the dogs. There is an association for the purpose of protecting the day, and Wilbur Crafts is at its head at Washington, D. C. I was a member of the Western Pennsylvania Sabbath Association for some time. This is not entirely a religious question, as you know.

"It is unfortunate that many Christians disregard the sacred character of the Lord's Day, especially the ones who still bow the knee to Baal in the way of falling in line with the world. I am a Christian; I love and honor God, and I neglect no opportunity to testify to the facts. 'Whosoever shall confess me before men him will I confess before the Father.'

"I love the old-time things, and have just purchased the loveliest old farm property one could wish for. The big hall and the equally generous rooms, with their hand carvings, men having come over from England, many many years ago, to carve the mantels and staircases and door arches, would do your heart good to see."

THE OFFICE HABIT.

We are told that "the business man is naturally methodical, a born organizer. His executive powers are out of proportion to his other gifts. Naturally such a man takes pleasure in the detail of business. Instead of getting up at ten o'clock and going out onto the street hustling for business, his office holds him. He writes letters. He directs this agent and that. He sends messengers here, there and everywhere to have everything done. This is a very laudable and effective kind of gift, but if it holds a man in the office writing a letter or note when he could be out seeing his customers face to face, or dealing with men and getting new ideas while pushing his business, he is allowing the office habit to calmly fold him in its embrace; he is bringing about his own business ruin. The office should be worked for all it is worth, but there is no substitute for personal contact with other business men. Sitting at a desk the view grows narrow. It is bounded by the four walls of the office. It is useless for any one to expect to know what is going on in the world without going into that world. There is no substitute for going out and seeing with one's own eyes what other people are accomplishing and how they are doing it."

BE PERSISTENT.

As we note from our office windows the steady growth of the big addition to the Dixon plant we are reminded of what we lately read in *Business*: "Building up a business may be likened to a brick wall. Each individual brick must be carefully and faithfully placed, and not until this simple operation has been repeated thousands of times will the building begin to command attention and commence to assume importance.

"It takes something more than money or brains to build up a business and gain a firm and reliable foothold in the world.

"It takes more persistence to-day than it did twenty years ago, and it requires a high degree of persistence to follow out the details of a business six days in the week and fifty-two weeks in the year. The simple reason why so few men succeed in business is not because they are not brilliant, but because they are not content to work steadily and patiently for results. The opportunities, which we so often hear about, are at our feet, and not over our neighbor's fence, as too many imagine."

TRUE KINGS.

One of the London stationery journals constructed this ingenious play upon words: The most powerful king on earth is wor-king; the meanest king, shir-king; the most popular king, smo-king; and the leanest one, thin-king; and the slyest one, win-king; and the most garrulous one, tal-king; and the thirstiest one, drin-king. And then there

is the hac-king, whose trade's a perfect mine; the dark-skinned monarch, blac-king, who cuts the greatest shine; not to speak of ran-king, whose title's out of question; or famous ruler, ban-king, of good finance digestion.—*American Stationer*.

Wrong you are, the greatest and most powerful king on earth is MAR-KING; and his sceptre is a Dixon's American Graphite Pencil. What would we do for all our records, our histories, our accounts and our books, and newspapers, if it were not for MAR-KING? Then again pee-king is much meaner than shir-king.

ENGLISH AS A WORLD LANGUAGE

The *American Exporter* says that one of the most interesting instances in recent diplomatic history is the fact that the new treaty between Mexico and China was written in English instead of the customary French. The treaty of peace between Spain and the United States was drawn up in French, as have been most of the important diplomatic doctrines of recent years. The action of Mexico and China, however, indicates what is unquestionably a strong growing tendency to substitute English for French as a diplomatic language of mankind. A number of the representatives of foreign countries at Washington now use English instead of French in all their official communications to the American Government; more, English is widely recognized to be the world's chief commercial language. The statistics of the International Postal Union show that 75% of letters sent in the entire world are addressed in English, and on ship-board and in seaport towns, the world over, English is the common medium of communication between people of different nationalities; even in Europe, particularly in Germany and Austria, English is superseding French to a great extent as a chief social language.

GRAPHITE FOR ENGINE CYLINDERS.

The Chicago Edison Company are using Dixon's Ticonderoga Flake Graphite now in all of their engine cylinders, and have equipped the engines with hand pumps for putting in the graphite. They are thoroughly satisfied with the results.

IMPORTS AND EXPORTS

Years 1869-1870, 1871-1872—4 years:

Imports and Exports in U. S. were..... \$2,127,000,000
Exports out of U. S. were..... 1,668,000,000

Balance against the U. S. in those 4 years, 30 years ago, \$500,000,000.

In years 1896-1897, 1898-1899—30 years after:

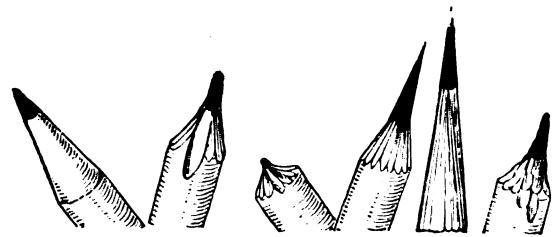
Imports into U. S. were..... \$3,056,000,000
Exports out of the U. S. 4,638,000,000

Balance in favor of the U. S., \$16,000,000. This is the whirligig of time.

UNCLE SAM KNOWS WHERE WE ARE.

The other day a letter came to us from out the far West addressed:

THE DIXON CRUCIBLE Co.,
Supply Address,
NEW JERSEY.



Do you ever reflect on the importance of the lead pencil and the part it plays in this work-a-day world of ours? There are as many styles and conditions of lead pencils as there are of men,—to say nothing of women.

The sharpening of a pencil is largely characteristic of the user. The function of the pencil is never ending. The stylographic pen and the fountain pen have never been able to oust it from its place in our affections, or from the desks in the counting house, the drawing boards of the architect and the draughtsman, and the schools; or the pockets of the businessman and the school boy. The lead pencil is as ubiquitous as the newspaper, and with it carries civilization into all lands.

The lead pencil is no modern invention, although the perfected "American Graphite" pencil is something that our grandfathers dared not hope for. The Dixon Company are making nearly 800 different kinds of lead pencils. This includes different sizes, different grades of hardness as well as of quality, colors, etc.

While the improvement of Dixon's "American Graphite" pencils was noticeable to all, yet infinitely more so was the advent of Dixon's colored crayons, which marked an epoch in the offices of railroads, insurance companies and schools, where colored crayons are used for checking and for drawing and where smooth, strong leads, vivid and lasting in color, are required.

"PLUMBAGO HEART."

This does not refer to the central and very vital organ of man, but to hoisting rope, the core or heart of which is treated with plumbago (graphite) to protect it from moisture and abrasion.

Graphite, which is also known as plumbago or blacklead, is one of the forms of carbon and is as pure and sweet and healthful as charcoal. Graphite paint is the only safe paint to use for roof painting where the rain water is used for drinking or cooking purposes.

A RARELY USED WORD.

The famous "innocuous desuetude" of President Cleveland is recalled by a letter written in English which we have received from a Cuban correspondent. He writes: "It is more necessary than ever to secure idoneous and reliable information." We thought very likely it was so but wasn't sure until we referred to the Standard dictionary where we found "IDONEOUS [rare] proper; suitable; proportionate."

AN INCOMPLETE PRESCRIPTION.—"What you want to do," said the druggist, as he handed the old darkey the patent medicine, "is to take a dose of this after each meal."

"Yes, suh," was the reply, "an' now, will you please, suh, tell me whar I'm gwine ter git de meals?"—Exchange.

Our Vice-President's Department

CHEAP FREIGHTS,

By pack-horse in 1784 it cost 10 cents per pound to carry freight from Philadelphia, Pa., to Erie, Pa.; and even as late as 1821 it cost 11 cents per pound from Philadelphia to Pittsburgh.

In 1898 the average freight rate in the United States was 1 $\frac{1}{2}$ cents per ton, per mile.

The 1784 rate and the 1821 rate is equal to 74 cents per ton, per mile; the 1898 rate, 1 $\frac{1}{2}$ cents per ton, per mile, and as the masses consume 99% of the freight, it is amusing to hear some people claim that modern progress does not help the masses.

BISMARCK.

Bismarck was a good business man—his estates all prospered. He received as a legacy several neglected estates, but brought them all up to a prosperous condition. He once said: "Whoever can do this (viz.: bring up a neglected business to solvent and paying lines), will in similar circumstances, given the necessary education, knowledge and position, generally be found equally capable of restoring the prosperity and dignity of nations."

WHAT IS INEVITABLE?

In the United States every man, woman and child uses every year in the average, based on 80,000,000 population, 400 lbs. of iron and steel. This takes about 16,000,000 tons. China to-day, with its 450,000,000 people, uses practically none. Think of the business of the future, when China becomes a machine-making and machine-using nation! Ditto India, ditto Africa!

CARNEGIE AND LIBRARIES.

Carnegie, the great money maker, bestows a \$50,000 library to some worthy town that accedes to his conditions, about one a week.

The admiring world looks on with wonder and praise, but some few with envy and jealousy. They envy his ability, his success, and add that anybody with his means would do so, or even better. But would they? There are other equally rich and successful money makers, and they don't. Each one of the *Graphite* readers can tell for himself, by an infallible test, whether he would or not.

Carnegie bestows 50,000 to 100,000 books at one gift. He has the means so to do—he does it. But you, kind reader, are not without a spare dollar or two; how many books have you bestowed in 1899 to some one needy, worthy reader? Your sunday school, (if you are religious) needs more and better books; have you bought and bestowed even one? You know some young fellow studying for a profession, paying his own way; have you sent him a copy of the latest chemical or engineering book, or subscribed for him for some good technical paper? Somebody of your acquaintance is suffering from the lack of equipment to be found only in books beyond his means; have you been the

hand of providence in his one case? If yes, when wealth rolls in on you, Carnegie fashion, you will establish libraries. If no, when the wealth arrives, you will hoard it, or spend it selfishly, and let the needy town hustle for its own library.

PRICES GOING UP.

All the supplies used in the Dixon works are advancing in price, and some of them alarmingly so.

In pencils the cedar wood is costing more, the graphite indefinitely more, glue is up, paper boxes are up, wood packing cases are up, all supplies toward repairing or making new machinery are largely advanced.

In the crucible works the advance in graphite ore has almost revolutionized the business. In the grease and paint business oils and fats are seriously up. Linseed oil is up, in short scarcely an important item which is not up from 10% up to graphite ore which is up for some grades between 350 and 400%.

The outlook is that these advances are to stay at least for some time.

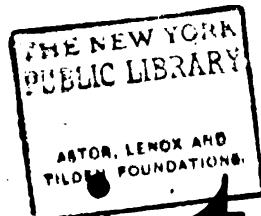
Everybody is busy, everybody is over-sold; nothing can be bought on tap. So this means high prices to stay, and it must only be a matter of time to get all selling prices to conform to the new prices of supplies.

RUSKIN.

John Ruskin, the most notable name in prose Victorian literature, passed from earth January 20, 1900. He was so appreciative and such a lover of the beautiful that one can imagine his eager eyes opening on the glories of the "world to come."

If you are a book lover, get his "Sesame and Lillies" next Sunday afternoon and set yourself down for some hours of extreme pleasure. The point of these few words is to call attention in "Sesame and Lillies" where he vents his indignation on those who buy poorly made, poorly printed and poorly bound books. A book, he argues, if worth anything at all, is worth buying in good binding, with good print and handsome cover. This also reminds us that Dixon from the beginning has insisted on this practice obtaining in selecting pencils. Select a pencil first for a good lead (Dixon's), for good work (Dixon's), for good finish (Dixon's), good stamp (Dixon's). A pencil lasts so long, is so much of a companion, is so cheap anyhow for the best—that we reiterate Ruskin's advice—not only see that your pencil is a pencil, but a first-class one soul and body. If the stamp reads Dixon's American Graphite—this is guaranteed.

Last week we had an order from a poorly rated firm and asked for a name or two as reference. By return mail a reply came saying that "they became so slow and unsatisfactory that we closed the account, and it is still closed." This was a reference with a vengeance!



MARKE^D COPY

Graphite

VOL. II.

APRIL, 1900.

No. 5.

Issued in the interest of Dixon's Graphite Productions, and for the purpose of establishing a better understanding in regard to the different forms of Graphite and their respective uses.

COPYRIGHTED BY THE JOSEPH DIXON CRUCIBLE CO., JERSEY CITY, N. J.

WHAT'S THE ANSWER?

We reproduce herewith an interesting tale by an author known to all except possibly some of the old bachelors of the Dixon Company. To the one who sends us the correct answer as to the distance walked; also (within half an hour) time of reaching top of hill, we will send a Dixon American Graphite pencil, and a beautiful graphite souvenir. As the solution is rather easy, and the readers of *Graphite* quick witted, we do not dare to make the reward more expensive.

THE TALE.

The ruddy glow of sunset was already fading into the sombre shadows of night, when two travelers might have been observed swiftly—at a pace of six miles in the hour—descending

the rugged side of a mountain, the younger bounding from crag to crag with the agility of a fawn, while his companion, whose aged limbs seemed ill at ease in the heavy chain armour habitually worn by tourists in that district, toiled on painfully at his side.

As is always the case under such circumstances, the younger knight was the first to break the silence. "A goodly pace, I trow!" he exclaimed. "We sped not thus in the ascent!" "Goodly, indeed!" the other echoed with a groan. "We climb it but at three miles in the hour."

"And on the dead level our pace is —?" the younger suggested; for he was weak in statistics, and left all such details to his aged companion.

"Four miles in the hour," the other wearily replied. "Not an ounce more," he added, with that love of metaphor so common in old age, "and not a farthing less!"

"'Twas three hours past high noon when we left our hostelry," the young man said, musingly. "We shall scarce be back by supper time. Perchance mine host will roundly deny us all food!"

"He will chide our tardy return," was the grave reply, "and such a rebuke will be meet."

"A brave conceit!" cried the other, with a merry laugh. "And should we bid him bring us yet another course, I trow his answer will be tart!"

"We shall but get our deserts," sighed the elder knight,

who had never seen a joke in his life, and was somewhat displeased at his companion's untimely levity.

"'Twill be nine of the clock," he added in an undertone, "by the time we regain our hostelry. Full many a mile shall we have plodded this day!"

"How many? How many?" cried the eager youth, ever athirst for knowledge.

The old man was silent. "Tell me," he answered, after a moment's thought, "what time it was when we stood together on yonder peak. Not exactly to the minute!" he added hastily, reading a protest in the young man's face. "An' thy guess be within one poor half-hour of the mark, 'tis all I ask of thy mother's son! Then will I tell thee, true to the last inch, how far we shall have trudged betwixt three and nine of the clock."

A groan was the young man's only reply; while his convulsed features and the deep wrinkles that chased each other across his manly brow, revealed the abyss of arithmetical agony with which one chance question had plunged him.

We now leave it with the readers of *Graphite* to figure it out with their Dixon pencils.

A SUBSTITUTE FOR BRASS.

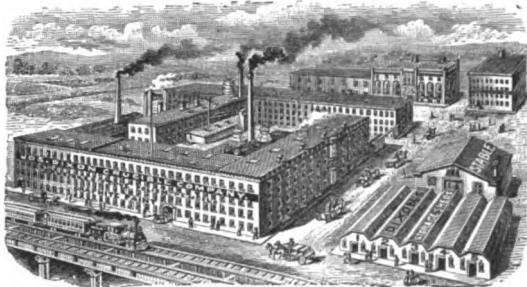
"The rise in the price of brass and the demand for increased wages recently made by the brass workers have quickened interest in England in the various substitutes for brass goods. According to "Vulcan," in the *Ironmonger*, attention has been chiefly directed to the art of electrobrassing, which has undergone considerable development during the last year or two. Thanks to the introduction of various improved methods of electrodeposition is now possible to cover iron castings with a coat of brass of substantial thickness—so thick that without close examination it is impossible to distinguish them from similar objects of real brass. The wearing qualities produced in this way are declared to be excellent, while they are, of course, much cheaper than would be the case if they were made throughout of the more expensive metal."

A similar and very satisfactory result has been accomplished here in America by the dip-gilding process. The brass is melted in either a regular Dixon blacklead crucible, or one specially made for the purpose. The molten mass is brought to a high degree of fluidity, and the article is to be dipped and must be made of iron or steel or some metal the melting point of which is higher than that of the gilding material.

PENNSYL-vania deserves her name from the tremendous quantity of Dixon's pencils used in that state.

ESTABLISHED 1827.

INCORPORATED 1868.



JOSEPH DIXON CRUCIBLE CO. JERSEY CITY, N. J., U. S. A.

SALESROOMS AT

68 Reade St., New-York. 1020 Arch St., Philadelphia.
304 Market St., San Francisco. 28 Victoria St., London.

RESIDENT REPRESENTATIVES:

BOSTON. CHICAGO. ST. LOUIS. PITTSBURG.
PARIS. HAMBURG. VIENNA.

GRAPHITE MINES AND MILLS AT TICONDEROGA, N. Y.
CEDAR MILLS AT CRYSTAL RIVER, FLA.

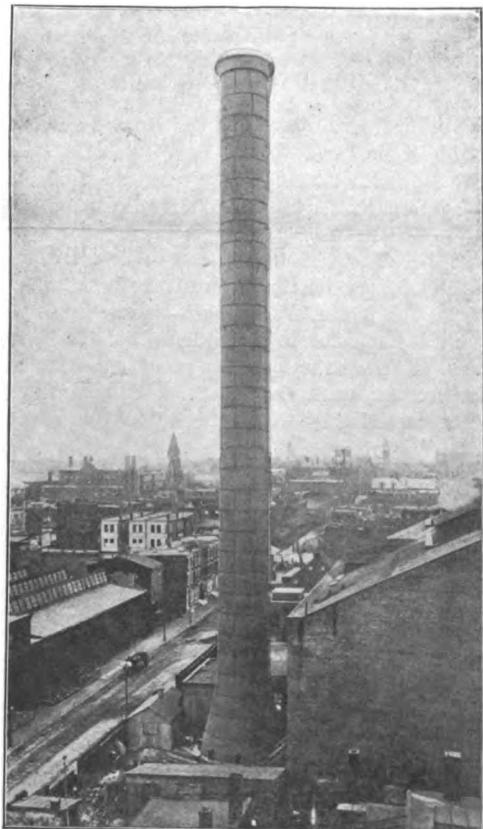
OFFICERS:

E. F. C. YOUNG, JOHN A. WALKER, GEO. E. LONG,
President. *Vice Pres. and Treas.* *Secretary.*

JERSEY CITY, N. J., April 1900.

FACTS—NOT THEORIES.

The subject of a durable protective paint for smoke-stacks is of interest to owners of stacks and to consulting engineers, and we think a great deal of the doubt that exists as



to the most durable paint for this purpose is due to exaggerated claims made by manufacturers of protective paints.

We believe that "the proof of the pudding is in the eating," and we ask that interested parties send a trial order for Dixon's Silica-Graphite Paint, color No. 4 (black, for stacks and boiler fronts), and in a practical test of this paint, on a heated surface exposed to the weather, a sufficient length of time, satisfy themselves that our product is the most durable and economical protective paint for metal surfaces exposed to the combined influences of great degrees of heat and climatic conditions, that is manufactured.

The illustration shows the large steel stack of the Union Traction Company, Philadelphia, and attention is called to the durability of Dixon's Silica-Graphite Paint, as given in the following letter:

UNION TRACTION CO.—ENGINEERING DEPT.

PHILADELPHIA, Pa., Nov. 11, 1899.

Joseph Dixon Crucible Company.

GENTLEMEN:—Replying to your inquiry of the 2d inst., would say that the west stack at Mt. Vernon Street station was painted October, 1897, the east stack October, 1898; and the stack at Thirty-third and Market Streets, in September, 1898. Very truly yours,

W. G. TWINING, Chief Engineer.

Some paints withstand the heat of boiler fronts, but when used on a stack they prove less durable and satisfactory; a point well worth considering in selecting a stack paint, as the cost of the labor in cleaning a rusted surface and repainting it is three times the cost of the material. Another important consideration is the fact that a stack is an extremely difficult surface to paint, and as there is danger of painters or employees being badly burned or falling, it is especially desirable that the necessity of repainting be put off as long as possible by using the most durable paint obtainable.

The records of the durability of this paint in its use all over the world for thirty years by the largest railroads, electric light and manufacturing companies, prove it to be durable and economical, and facts as to its use will be furnished at any time. The Columbus Edison Electric Light Company, Columbus, O., advise us that their 152-foot stack was painted with two coats of this paint when erected November, 1894, and repainted November, 1899, as the paint had lost its gloss, but was in excellent condition and protecting the metal.

Stacks of the Pennsylvania Railroad Company, Union Railway Co., United Electric Light and Power Co., Edison Electric Illuminating Co., and Department of Water Supply of the City of New York, have been painted a year or more, and the letter of the North Jersey Street Railway Co., gives further evidence of the durability of this paint.

NORTH JERSEY STREET RAILWAY CO.

NEWARK, N. J., January 29, 1900.

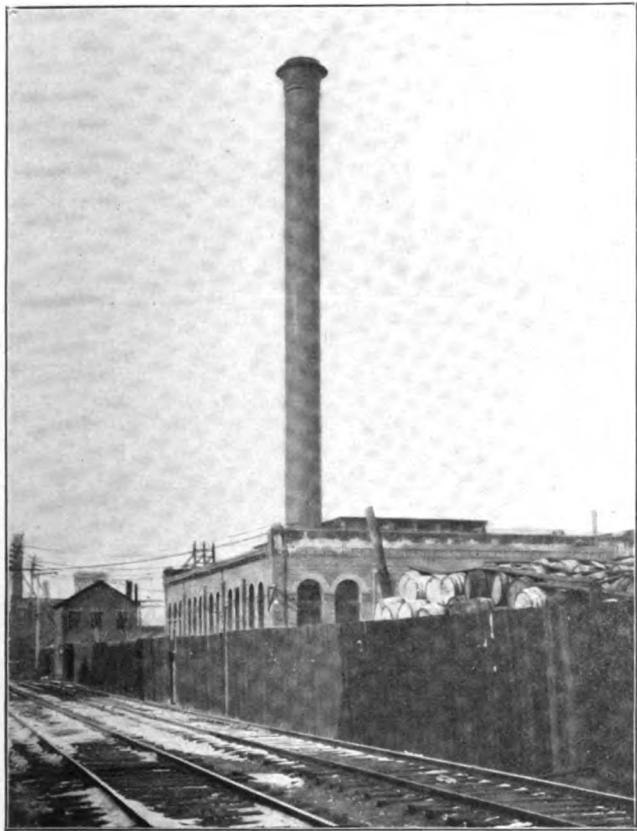
Joseph Dixon Crucible Co.

GENTLEMEN:—Replying to your inquiry as to the durability of Dixon's Silica-Graphite Paint, I beg to say that this paint has given entire satisfaction, and I consider it the most durable protective coating for exposed metal work that is made.

The 200-foot steel smoke-stack of this station is painted with the No. 4 paint, every *two years*, and we also use this paint on all boiler fronts and stacks of the Jersey City Station, which are subject to very great degrees of heat. The interior and exterior iron of this station was painted when erected five years ago, and the paint is in perfect condition to-day.

Very truly yours,

J. E. ELLIOTT, Chief Engineer.



STACK OF THE NORTH JERSEY STREET RAILWAY CO.

Ticonderoga Flake Graphite is inert and absolutely unaffected by heat, acids, or gases. Its specific gravity is but 2.3, and it is an ideal pigment for a protective paint subject to heat, as it is a known fact that a pigment of low specific weight proves the most durable under the influence of heat.

The READY MIXED is recommended, as a special vehicle is used in Color No. 4, which withstands greater degrees of heat than the fire-boiled linseed oil used as a vehicle in the other colors. The Ticonderoga flake graphite has a veneer-like surface and the paint will cover about 600 square feet per gallon, and if properly brushed out, as it should be to secure best results, even greater surface will be secured.

A NEW GRAPHITE PACKING.

A Berlin firm proposes as a packing for pistons subjected to high steam pressures, and the consequent great heat, the use of compressed carbon or graphite, which it is claimed, insures a perfectly steam-light action, without the necessity to employ any lubricant. The packing for a piston may be made in the form of carbon blocks operating in combination with carbon wedges made of a softer material than the blocks.

Productions of the Dixon Crucible Co.

Dixon's Black-Lead Crucibles and Retorts.

All sizes and for all purposes. Bowls, Dippers, Stirrers, Stoppers, Nozzles, Muffles, Etc.

Dixon's Brazing Crucibles.

Made in several shapes for dip-brazing.

Dixon's Graphite Boxes and Covers.

For baking carbons and filaments for electric lighting.

Dixon's Fine Office and Drawing Pencils.

Unequalled for smooth, tough leads and uniformity of grading.

Dixon's Colored Crayons.

In wood or solid. For schools, railroads, editors or factory.

Dixon's Lumber Leads.

Black or colors; for green or dry lumber.

Dixon's Felt Erasive Rubber.

For erasing pencil marks, type-writer work, or ink.

Dixon's Carburet of Iron Stove Polish.

The old reliable; in cake or bulk form.

Dixon's Pure Flake Lubricating Graphite.

A solid lubricant for all frictional surfaces.

Dixon's Special Graphite No. 635.

For lubricating cylinders of gas engines and all close or delicate mechanical parts.

Dixon's Electrotyping Graphite.

Used by the majority of practical electrotypers of this country.

Dixon's Hatter's Lead.

For coloring hat bodies.

Dixon's Plumbago for Shot Polishing.

Dixon's Plumbago for Powder Glazing.

Dixon's Plumbago Foundry Facings. .

Dixon's Yacht Plumbago.

For lubricating and smoothing bottoms of yachts.

Dixon's Graphite Axle Grease.

Better and cleaner than castor oil for trucks, wagons, carriages.

Dixon's Graphite Waterproof Grease.

For use on trolley car gears which are enclosed in a gear case.

Dixon's Graphited Oil.

For use in all places where the use of a grease is impracticable.

Dixon's Graphite Cup Greases.

For use in cups or open bearings, on spindles, shafting, etc.

Dixon's Oiled Graphite.

Dixon's Lubricating Compound.

For gears of electric motors.

Dixon's Silica-Graphite Paint.

For metal or wood-work, roofs, bridges, telegraph and trolley poles, smoke-stacks, boiler fronts, and iron construction work.

Dixon's Graphite Pipe-Joint Compound.

Better and cheaper than red lead. For steam, gas and water piping, smearing gaskets and flanges.

Dixon's Cycle Chain Graphites.

For perfectly lubricating chains and gears of bicycles.

Dixon's Graphitoleo.

For lubricating bicycle chains, sprockets, pivots and pins; gun locks, and for general use.

Dixon's Commutator Graphite.

Will glaze the commutator with the finish so much desired by electrical engineers.

Dixon's Anti-Flux Brazing Graphite.

To prevent the spelter from adhering when brazing.

Dixon's Crucible Clay and Graphite Mixture.

For lining and repairing furnaces and fire boxes.

Dixon's Stove Cement.

For repairing stove or range lining.

Dixon's Traction Belt Dressing.

For preventing belts from slipping and thoroughly preserving the leather and protecting its elasticity.

Dixon's Solid Belt Dressing.

Convenient for those who prefer a solid dressing.

Dixon's Graphite Resistance Rods.

From one-eighth to one inch diameter; any resistance required.

Dixon's Graphite Products for Electricians.

Special circulars with detailed information sent on request.

Our Vice-President's Department

A UNIQUE PLANT.

The Dixon plant is unique and is the only organization of the kind in the world in this industry.

We make everything of which graphite is an ingredient.

Others make pencils, but no crucibles; others make crucibles, but no pencils. Others make graphite paint, but no lubricants, others make lubricants, but no stove polish, and thus through all the ramifications of the graphite industry others make one item solely, while Dixon makes everything under one roof and one management. Pencils, crucibles, lubricants, foundry facings, greases, paint, electric specialties with all their details are found in our catalogue. It is fair to say we are the fathers of the graphite industry—we have everything at first hand. We dig the ore, cut the forests down, assemble the raw stock and complete a hundred and one useful products. We are indispensable to civilization, for no leading industry to-day but uses something we make better than anyone else.

DIXON'S ORGANIZATION.

The Dixon Company has now quite an extensive organization stretching far and wide. First there is the works and main office in Jersey City, next the American flake graphite mines at Ticonderoga, N. Y.; then control of the product of the Bavarian graphite mines in Austria; then a cedar wood plant in Florida, each place equiped with a large steam plant and elaborate factory equipment.

Our selling organization is an army of travellers going all over the United States, South America, Europe and Asia; next we have a salesroom at 68 Reade St., New York; one at 1020 Arch Street, Philadelphia, and a third one at 308 Market Street, San Francisco; a fourth at 26 Victoria Street, London; then a headquarters for salesmen at 1316 Monadnock Block, Chicago, another at St. Louis.

We have salesmen who take all our lines; others are specialists who take only one article. In this thorough way we exploit the graphite industry.

MAKE IT CLEAR.

"General White's chief misfortune is a lack of clear literary style. His reports on Monday's fight contain discrepancies which can only be explained on the theory that he does not possess a talent for telling with precision what has happened. He has no intention of misleading either the War Office or the public, yet his reports cannot be reconciled with one another owing to his awkward methods of expression."

The above from the daily papers hints at the defect in so much of one's business correspondence.

The days of worrying with bad penmanship are gone, as everybody who is anybody uses a typewriter; but where one's mail is large, as is the case with the Dixon Company—it is surprising how many letters come of which the reader has to say what does the writer mean.

The first element in a speech, said Daniel Webster, is

clearness, the second also clearness—likewise the third. So should it be with a business letter—it should be absolutely clear, the meaning clear as crystal.

GREASE VS. OIL FOR LUBRICATION.

There is a debatable ground here, and as the Dixon Company manufacture graphite greases we have a new pamphlet out which presents the case, debating it with our opponents, and it offers much that is new under the following headings: "Why Grease is Superior to Oil," "The Function of a Lubricant"; then we outline the make-up of our various graphite greases and also explain their fitness to individual work.

This is done in an 8-page pamphlet printed in large type—send in your address if interested, and we will mail it post-paid.

UP TO DATE—OR THE CONSEQUENCES.

Speaking of their newspaper-reported large profits, Mr. Andrew Carnegie said that thoughtless people did not reflect that a big percentage of such reported profits were not at all available for dividends, but must be spent to keep the industry up to date. The Carnegie people, he added, do this religiously, and as a result they rule their industry and fear no competition, but are themselves greatly feared.

A contrary practice is shown in the case of the Harpers and Appletons—no progress, no new inventions, everything of the last century, new machines passed by because they cost too much money—and as a consequence they both go over into the pit of bankruptcy.

FOUNDRY FACINGS.

Perhaps a stray copy of *Graphite* will drift into the casting department of an iron foundry, and it may interest the boss molder to know that we make a very useful series of plumbago facings, sometimes called India Silver Lead. We are printing now a new 6-page pamphlet on the subject, explaining all our kinds, giving the theory of the use of facings, and explaining the adaptation of a given facing to green sand, dry sand, flat molding or loam work.

Send your address for a copy, postpaid. It is printed in fine large type.

DON'T FORGET.

Don't forget our reminder in January's *Graphite* to take your pencil from your pocket and see if the stamp reads: "Dixon's American Graphite SM"—or "M"—or some other grade of hardness.

These "American Graphite" leads have been marvelously improved during the past eighteen months—once get one of the new ones, we don't think you will ever write again with anything else.

Graphite

VOL. II.

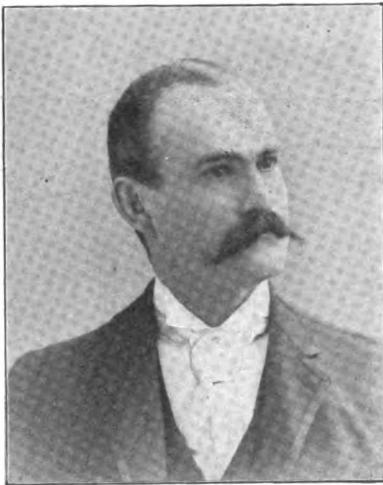
MAY, 1900.

No. 6.

Issued in the interest of Dixon's Graphite Productions, and for the purpose of establishing a better understanding in regard to the different forms of Graphite and their respective uses.

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ANOTHER DIXON REPRESENTATIVE.



MR. JAMES J. ALLEN,
Manager of our San Francisco Salesroom.

Mr. James G. Allen was born in the city of Brooklyn, New York, in 1861, and was educated in public schools of that city. He began his business career with the American Graphite Company in 1880, and when that corporation was absorbed by the Joseph Dixon Crucible Company, a few months later, was transferred to the New York office of the Dixon Company.

During four years' training in the bookkeeping and sales department of that office Mr. Allen proved himself painstaking, trustworthy and competent to fill the vacancy made by the death of the manager of the San Francisco branch of the Dixon Company.

Mr. Allen assumed his new duties in July, 1884. At that time the Frisco branch was at 507 California Street and, to use Mr. Allen's words: "We hadn't room enough to sling a cat around by the tail without knocking over a box of Dixon's Pencils."

A little later a removal was made to 106 Davis Street, but after three years such a material increase was made that larger quarters were required and the present location, 304 Market Street, was selected. The building was erected by Mess. Huntington & Hopkins, two of the "big 4" who built the Central Pacific Railroad, and had been occupied by the Huntington, Hopkins Co., the oldest and largest concern in San Francisco.

The location is in the wholesale district and the best in

the city. The store is, however, now too small for the demands made upon it and it looks as if another move will have to be made in a few years.

During the sixteen years' management of Mr. Allen he has shown himself worthy of the confidence placed in him. The territory now covered by his salesmen is from Alaska on the north to Central America on the south, Utah on the east, and New Zealand, Australia, China and Japan on the west.

Throughout all of this large territory there is a good demand for Dixon's Graphite Axle Grease, Silica-Graphite Paint, Dixon's American Graphite Pencils, Graphite Lubricants, Black-Lead Crucibles, Foundry Facings, etc.

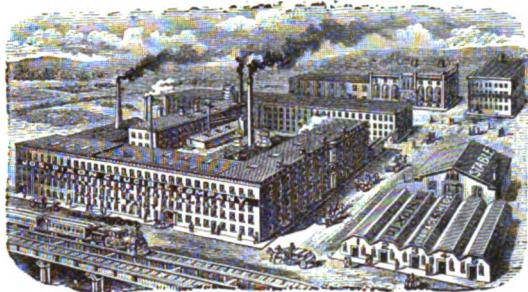
WHAT SOMETIMES HAPPENS.

Gen. Chas. Miller, of the Galena Oil Company, when speaking on the subject of lubrication at a meeting of the New York Railroad Club, said: "While on the subject of lubrication, I would say that we came across a rather interesting thing the other day which was new to me. I had a call from the representative of a concern who wished to put a new dry lubricant before us to be used where graphite is sometimes used. The black substance had the usual slippery and smooth feeling that you would expect in a graphite or any other dry lubricant, and on analyzing it, our chemist found that it was a black sulphite of antimony. That is the first time I ever heard of an antimony salt as a lubricant. I thought the matter of sufficient interest, however, to refer it here."

This is only one more case of the offering of an inferior or worthless article in place of pure flake graphite. With the advent of Dixon's Pure Flake Graphite and its acknowledged value as a lubricant, there have come many attempts on the part of people, ignorant of the nature of lubricants, or without principle, to substitute inferior graphite or some worthless material for lubricating purposes. We will now repeat what we have so often said, that the right kind of graphite, properly prepared, is without an equal as a lubricant, but that anything less than this is of but little value, and possibly worse than useless. A solid substance when used as a lubricant must be absolutely free from grit, otherwise bearings or cylinders are liable to be cut beyond repair. If you insist on having Dixon's Pure Flake Graphite, and having it only in the original packages, as Uncle Sam does, then you will be certain of getting the right material.

ESTABLISHED 1827.

INCORPORATED 1868.



JOSEPH DIXON CRUCIBLE CO. JERSEY CITY, N. J., U. S. A.

SALESROOMS AT

68 Reade St., New-York. 1020 Arch St., Philadelphia.
304 Market St., San Francisco. 28 Victoria St., London.

RESIDENT REPRESENTATIVES:

BOSTON. CHICAGO. ST. LOUIS. PITTSBURG.
PARIS. HAMBURG. VIENNA.

GRAPHITE MINES AND MILLS AT TICONDEROGA, N. Y.
CEDAR MILLS AT CRYSTAL RIVER, FLA.

OFFICERS:

E. F. C. YOUNG, JOHN A. WALKER, GEO. E. LONG,
President. *Vice Pres. and Treas.* *Secretary.*

JERSEY CITY, N. J., June, 1900.

ARE WE SLOW IN APPRECIATION?

Professor R. H. Thurston, of Cornell University, says in *Collier's Weekly*:

"Twenty-five years ago, and earlier, a very familiar figure at the meetings of the "Polytechnic Club" of the American Institute—then a very active and useful scientific institution—was Mr. J. K. Fisher, joint author with the famous mechanical engineer and metallurgist, Alexander Holley, of a long-standard work, "The Steam-Carriage on the Common Road." Mr. Fisher had long been seriously interested in the promotion of the introduction of the "automobile" carriage, then practically only known in the form of the steam carriage. He was most optimistic regarding it, and always insisted that the time would come, and that soon, when such vehicles would become common and would even drive out of our cities, in due time, every representative of the equine race. His own plans were very successful in design and construction, so far as affecting his own experimental work; but his enthusiasm never found the justification of realization in his lifetime. He predicted that, ere the twentieth century should dawn, Broadway would be floored over with iron plates, and that all the traffic of Manhattan, in travel or transportation of merchandise, would be carried on with automobile vehicles.

"While this prediction was evidently over-sanguine, and while we have not seen it completely fulfilled before the opening of the twentieth century in its entirety, it is no less evidently the fact that we are likely to see an enormous progress made in the immediate future, and we may be prepared to witness very extensive and extremely rapid advances in automobile construction and in the systems of

transportation to which that remarkable machine lends itself."

About twenty-five years ago Prof. Thurston did some predicting himself and the mechanical world is now rapidly acknowledging his foresight. At that time Prof. Thurston demonstrated, with scientific accuracy, the comparative value of graphite as a lubricant with the various oils and greases in common use. The results of the tests were as follows:

Under same number of pounds pressure, and traveling at same rate of speed, Dixon's Flake Graphite did nearly three times as much work as the best quality of winter sperm oil, which was considered at that time the best oil for lubricating purposes.

He also tested a sample of the best lubricating grease—with and without graphite. The grease without the graphite gave no better results than the sperm oil; but when fifteen percent, by weight, of Dixon's Pure Flake Graphite was added, the bearings were run nearly six times longer at the same rate of speed. Furthermore, where graphite was used there was no cutting, and the bearings remained in perfect condition.

During the past five years the growth of graphite lubrication has very largely increased both in the United States and abroad, and we predict that five years hence the practice by educated and expert engineers of adding graphite to all lubricating oils and greases will be universal.

A CASE IN POINT.

An architect and consulting engineer has been specifying Dixon's Silica-Graphite Paint for some little time. One of these specifications was for a new roof on a factory. About seven or eight months after the roof was painted two coats, the architect received word from the owner of the factory that the paint had all worn off the roof, and the tin was rusting; he insisted on having it painted again without expense to himself.

The painters were a well known firm and in good standing, and they stated that they had simply put on the paint that had been specified, and if it did not last, it was not their fault.

The architect then came to us to have the matter fixed, and we opened correspondence with him in the endeavor to try and avert the necessity of sending the owner of the factory twenty-five gallons of paint free of charge to repaint the roof; at the same time we desired to keep the good friendship of the architect.

After putting up as strong a defense as possible, so far as the quality of the paint was concerned, we found that both the owner of the factory and the architect were determined to make somebody stand the expense of repainting the roof.

We thereupon set out to find where the painters had bought the Dixon paint for the job. We found that they had purchased five gallons of Dixon's Silica-Graphite Paint from a local dealer, who carried it in stock, and that the balance of the paint used on the job was a paint called the "P. & S.", of which it was judged they used about forty gallons.

The matter is now nicely adjusted; and the painters are going to repaint the roof at their own expense, and Dixon

crayons, especially in the elementary grades; and all teachers who have used them are highly satisfied with the artistic quality of the work done.

GRAPHITE BRUSHES FOR GENERATORS, MOTORS AND DYNAMOS.

Quite an important part of the Dixon plant is run by electric power. Like all companies similarly equipped we have had more or less difficulty with the brushes. They have either worn too rapidly, caused squealing or have sparked.

About a year ago we thought we would see what we could do in the way of making a suitable graphite brush. After some experimenting we produced a brush that we thought pretty near right. We first placed them on our motors and later on our generator. They have been in use for nearly a year. They are far beyond anything we have been able to buy — both in economy and efficiency. They have been tested by others and found satisfactory. We shall be glad to hear from any of our readers who are interested.

MODERN DICTIONARIES.

Literary Life says concerning modern dictionaries:

English	contains	260,000	words,
German	"	80,000	"
Italian	"	35,000	"
French	"	30,000	"
Spanish	"	20,000	"

Among the Oriental languages, the Arabic is the most copious, its vocabulary being even richer than that of the English language.

FRICITION OF STEAM PACKINGS.

It is generally conceded that one of the most serious frictional losses in engines and pumps is that due to the rubbing of pistons and valve rods in their stuffing boxes, and that this loss varies with the kind of packing employed, the steam pressure, and the judgment of the engineers.

In some very careful experiments at the Case School of Applied Science, tests were made of seventeen samples of packings. An anywhere near full description of the tests would make an article too lengthy for our paper, but the conclusions were that the softer rubber and graphite packings which are self-adjusting and self-lubricating, consume less power than the harder varieties. An excellent description of the tests will be found in the *Iron Age* of March 22, 1900.

The conclusions of those making the tests show very thoroughly the value of graphite for the reduction of friction.

AN INCOMPLETE PRESCRIPTION.—“What you want to do,” said the druggist, as he handed the old darkey the patent medicine, “is to take a dose of this after each meal.”

“Yes, suh,” was the reply, “an’ now, will you please, suh, tell me whar I’m gwine ter get de meals?”

(Exchange.)

Productions of the Dixon Crucible Co.

Dixon's Black-Lead Crucibles and Retorts.

All sizes and for all purposes. Bowls, Dippers, Stirrers, Stoppers, Nozzles, Muffles, Etc.

Dixon's Brazing Crucibles.

Made in several shapes for dip-brazing.

Dixon's Graphite Boxes and Covers.

For baking carbons and filaments for electric lighting.

Dixon's Fine Office and Drawing Pencils.

Unequalled for smooth, tough leads and uniformity of grading.

Dixon's Colored Crayons.

In wood or solid. For schools, railroads, editors or factory.

Dixon's Lumber Leads.

Black or colors; for green or dry lumber.

Dixon's Felt Erasive Rubber.

For erasing pencil marks, type-writer work, or ink.

Dixon's Carburet of Iron Stove Polish.

The old reliable; in cake or bulk form.

Dixon's Pure Flake Lubricating Graphite.

A solid lubricant for all frictional surfaces.

Dixon's Special Graphite No. 635.

For lubricating cylinders of gas engines and all close or delicate mechanical parts.

Dixon's Electrotyping Graphite.

Used by the majority of practical electrotypers of this country.

Dixon's Hatter's Lead.

For coloring hat bodies.

Dixon's Plumbago for Shot Polishing.

Dixon's Plumbago for Powder Glazing.

Dixon's Plumbago Foundry Facings.

Dixon's Yacht Plumbago.

For lubricating and smoothing bottoms of yachts.

Dixon's Graphite Axle Grease.

Better and cleaner than castor oil for trucks, wagons, carriages.

Dixon's Graphite Waterproof Grease.

For use on trolley car gears which are enclosed in a gear case.

Dixon's Graphited Oil.

For use in all places where the use of a grease is impracticable.

Dixon's Graphite Cup Greases.

For use in cups or open bearings, on spindles, shafting, etc.

Dixon's Oiled Graphite.

Dixon's Lubricating Compound.

For gears of electric motors.

Dixon's Silica-Graphite Paint.

For metal or wood-work, roofs, bridges, telegraph and trolley poles, smoke-stacks, boiler fronts, and iron construction work.

Dixon's Graphite Pipe-Joint Compound.

Better and cheaper than red lead. For steam, gas and water piping, smearing gaskets and flanges.

Dixon's Cycle Chain Graphites.

For perfectly lubricating chains and gears of bicycles.

Dixon's Graphitoleo.

For lubricating bicycle chains, sprockets, pivots and pins; gun locks, and for general use.

Dixon's Commutator Graphite.

Will glaze the commutator with the finish so much desired by electrical engineers.

Dixon's Anti-Flux Brazing Graphite.

To prevent the spelter from adhering when brazing.

Dixon's Crucible Clay and Graphite Mixture.

For lining and repairing furnaces and fire boxes.

Dixon's Stove Cement.

For repairing stove or range lining.

Dixon's Traction Belt Dressing.

For preventing belts from slipping and thoroughly preserving the leather and protecting its elasticity.

Dixon's Solid Belt Dressing.

Convenient for those who prefer a solid dressing.

Dixon's Graphite Resistance Rods.

From one-eighth to one inch diameter; any resistance required.

Dixon's Graphite Products for Electricians.

Special circulars with detailed information sent on request.

Our Vice-President's Department.

WHY IS IT?

Why is it that some folks are so conscientious on minor points and so "kussed" lax on more important ones?

A customer to-day returned a draft drawn for an *overdue* bill, saying he didn't pay drafts drawn with exchange.

It is quite important for all of us that we pay our bills when due; this is the spinal marrow of business. Whether a draft should be drawn with exchange or not is a small affair compared with paying bills promptly. This customer of ours strained at a gnat and swallowed a *sauv mill*.

CHEWING THE PUDDING-BAG STRING.

It used to be said that chewing the pudding-bag string was a better test of the pudding than acres of argument.

This is proven again in the case of tin plate. The *pros* and *cons* of a protective tariff have taxed the time of hundreds of legislators, but the figures of the tin plate industry end all debate.

In 1890 this industry did practically not exist in the United States. It then became the subject of special protective laws—and see the results:

FISCAL YEAR.	POUNDS.
1891-1892	13,646,719
1892-1893	99,819,202
1893-1894	139,223,467
1894-1895	193,801,073
1895-1896	307,228,621
1896-1897	446,982,063
1897-1898	681,674,028
1898-1899	791,371,488

Total, 2,673,746,661

This would be equivalent to a total production of 24,756,900 boxes of 108 pounds.

The argument is knocked down, it leaves nothing further to be said.

BRITISH GOLD.

There used to be lots of talk in the United States about British gold—but these tables are also turned, for the other day, when the English War Department advertised for a loan of \$150,000,000, it was also advertised in New York, and ten per cent. of the loan was taken in New York City.

THE EXPOSITIONS OF PARIS AND CHICAGO.

Reading so much of the opening of the Paris Exposition reminds us of a sail down the river Seine last June, when from the deck of the little steamer the gigantic preparations could nicely be seen. They say that there will be nothing there to equal or even approach the Court of Honor at Chicago, but in general artistic grouping of the whole thing, and in its color effects, it will far exceed Chicago. As was Chicago, so will Paris be—it will be a liberal education to

be there, so much to see, so much to learn, so much out of the every day hundrum, so much to make life happy and brilliant, that those who lost a sight of Chicago lost something that nothing can replace, and those that don't see Paris in the summer of 1900 will probably never see its equal elsewhere. Seeing a large stereopticon picture of the Paris Electrical Building—so grand, so luminous—makes one wish to take the next steamer over.

ONE MAN CAN AND THE OTHER MAN CAN'T.

Lord Roberts—"Bobs"—of the Boer war, is an illustration of personality. Everything went wrong before his arrival, and everything has succeeded well for the English since, showing it is to the man and not to the army or the cause one must look for results.

Someone asked a great money-maker one day what was the best business to embark into for a sure fortune. He answered that it was not the business but the man, and he added that there will be fortunes for the next generation in stocks, in hardware, in iron, in groceries, in dry goods, but as to who will make them depends on the man. One man, given the same circumstances, will succeed, his neighbor won't,—it is not in the circumstances, but in the man.

THE CHINESE are a nation living in brick houses in a land without a brickmaking machine, says *Leslie's Weekly*. All the millions of homes in the thousands of walled cities are built of brick, and every brick made by hand. These bricks are made by labor costing but ten cents per day, still they cost more than our machine brick made with labor costing twenty-five times as much.

ANNUAL MEETING OF STOCKHOLDERS.

At the annual meeting of the stockholders of the Joseph Dixon Crucible Company, held at the Company's office, on Monday, April 16, the following directors were elected:

EDWARD F. C. YOUNG.
JOHN A. WALKER.
DANIEL T. HOAG.
RICHARD BUTLER.
WILLIAM MURRAY.
ALEXANDER T. MCGILL.
JOSEPH D. BEDLE.

The balance sheet of December 31, 1899, was presented by the Treasurer to the stockholders and approved by them. Statistics of sales were read by the Secretary, and business matters pertaining to the Company generally discussed.

The methods of the management were approved by the stockholders, and the re-election of the old Board was the result.

After the stockholders' meeting, the directors organized and elected Edward F. C. Young, President; John A. Walker, Vice President and Treasurer; George E. Long, Secretary; and Joseph D. Bedle, Counsel.

Graphite

VOL. II.

JUNE, 1900.

No. 7.

Issued in the interest of Dixon's Graphite Productions, and for the purpose of establishing a better understanding in regard to the different forms of Graphite and their respective uses.

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THE EVOLUTION OF SCHOOL PENCILS.

Judging from the improvements in what (for want of a better name) may be called the "mechanics" of the school room, there has been a mighty uplifting of the ideals of American public education during the last half century. Compare, for example, the rough board benches of fifty years ago with the comfortable and substantial seats now in use; or compare the old stoves (if the school room was fortunate enough to have one), with the present highly efficient and complex steam and hot-water systems of heating—and what a difference! In all the other paraphernalia of the class room, too—the ventilators, toilets, maps, globes, blackboards, pens, paper, ink and chalk—what strides have been

made in the last five decades!

Yet we doubt if any of these tools of the school can boast of so extraordinary a development as the lead pencil in the same period. There are men now living who can recall the day of the "plummet," a bit of soft lead—the real metal—hammered out into stick form, which was itself a rarity. Since that day the Joseph Dixon Crucible Company has spent an immeasureable amount of labor and ingenuity on the "American Graphite" pencil. We have ransacked the world for the best graphite ores for pencil making, and for the softest, straightest grained wood for casing. We have designed machinery for grinding these ores, and for refining them after grinding. We have patiently worked out methods of dying, softening and finishing the wood. We have made use of the best mechanical skill, simply that the leads in our pencils might constantly be a little smoother, a little tougher and a little blacker. And—since the name of a responsible lead pencil manufacturer on the pencil itself is the only guarantee the buyer has that he gets full value for his money—we have had to invent apparatus for stamping and printing on highly polished wood.

We have thoroughly appreciated the fact that the ideals of American education are far higher than the mere learning of reading, writing and arithmetic. Nature teaches by objects, and next to the object itself, for purposes of

instruction, comes its visual representation of paper. We know that the best educators of this country have held, therefore, that drawing has educational merits of the very first importance. It trains the eye and the hand, as well as the mind.

Now, what is needed in a drawing pencil is not merely smooth, tough leads, but also that nameless, elusive quality which produces soft, broad, "sketchy" lines, such as are made by light and shade in Nature, where no harsh, hard effects are ever seen; and it costs money to get this quality. That was the great difficulty. It was hard enough to get the quality, no matter what it cost; but to get it at a cost that would place the pencil within the reach of the average school board, was indeed a tough problem.

But we have solved it. We have evolved a pencil that is intensely black, perfectly smooth, and extremely tough, and which will yield the soft, "sketchy", natural effects demanded by Art. We believe these pencils are a good measure of the advance that has been made out merely in the "mechanics" of the class room, but also in the ideals of American education, for they represent the last stroke of successful work that has been done on the graphite school pencil. We have, in other words, evolved the ideal pencil for school drawing, and we can sell it at a price which places it within the reach of any school board. These pencils are made in all degrees of hardness, from S, or soft, to VH, or very hard, and are absolutely uniform in quality.

We will be glad to send samples and quote prices on application.

GRIT.

Grit is a good thing when in the grain of character. It may generally be described as heroism materialized—spirit and will thrust into heart, brain and backbone, but grit in a lead pencil means not only friction on the paper, but friction and irritation on the nerves. The irritation at first may not be noticeable, but it is there and means consequent suffering and ill health. Eminent doctors have demonstrated this.

A well-known doctor of divinity of Boston tells us that he always uses a Dixon American Graphite pencil in preference to a pen, because he had found by long experience that a flow of thought is less interrupted when a pencil is used, and he has demonstrated that a Dixon pencil, with its smooth and tough, yet yielding lead, enables him to do more work with less nerve and mental exhaustion than with any other pencil. Those who suffer from nervousness should make a note of this.

Our Vice-President's Department.

BUSINESS.

Business keeps good with us and no slacking of demand is visible. We make the quality of our goods the best we know how. Our various superintendents are never told that selling prices are low and goods must be made accordingly, but they are imperatively ordered to keep the goods plump up to the standard in every respect—and we in the office will take care of the selling price.

ENDS OF THE EARTH.

In the Dixon works we use cedar for pencils from Florida, U. S., graphite for crucibles from India (Ceylon), gums from New Zealand, waxes from Japan, pigments from Germany, also graphite from northern New York (Ticonderoga), and in turn we sell our products to every quarter of the globe. We returned the Ceylon-India compliment by a shipment there this week. Great is Dixon—*good goods his keynote!*

QUICK WORK.

You don't feel how near the ends of the earth are till you use the cable and get your answer.

The other day we cabled to the island of Ceylon in the Indian Ocean about graphite prices, and in a few hours we had the answer. The electric spark jumped that 12,000 miles in a way which in the first century would have been used by the priesthood as a miracle.

MEMORIES OF EUROPE.

In Antwerp, one day last summer, we were early at the train *en route* for Brussels. Our companions in the railway coach were a very dignified, well-to-do looking lady and her daughter. Outside standing on the platform was the husband and father with his head in the car window and chatting with his people. He looked like a prosperous, well groomed business man. Once started, the ladies of both parties picked up an acquaintance—talking in French—when the Antwerp lady said: "I thought you were Americans, and my husband, who was talking to me before the train started, whispered to me that you were Indians from America."

One Sunday evening we were at Meyringen, Switzerland. The hotel was chiefly filled with a large excursion party from England. They belonged to the prosperous middle class, were from appearance intelligent, bright, well dressed and accustomed to a large summer outing. We were at the leading hotel, and the usual *table d'hôte* course dinner was served. Next us at the table was a lovely appearing elderly English lady, full of refinement and with a gentle, kind manner. She on learning that we were from America, asked if we ever had course dinners in America!

A pause came in a long business interview one day in Vienna, when the principals left us for a private conference and one of the younger attaches of the office, who was present to answer questions as to details and other minor mat-

ters, came and inquired about our poets Longfellow, Holmes, Lowell, Bret Harte.

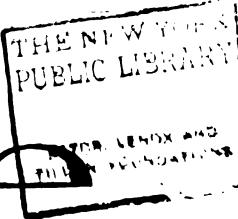
"What do you know here in Vienna about our New England poets?" we asked. "Oh! he had read them all in the original—, and were they considered our best—, were they popular at home?"—and this led to quite a literary talk. Showing his acquaintance with American literature and poetry to be on a par with well informed Americans and much more so than we, his friends, were acquainted with Austrian literature.

NO ROOM FOR PESSIMISTS.

With labor every where employed; with the farms prospering as never before; with the railroads overburdened with traffic; with our exports of merchandise increasing, in spite of high prices; with a balance of trade still over \$600,000,000 in our favor; with a sound currency assured by Congressional action; with the Philippine war near its end; with new markets opening to us everywhere; and with 80,000,000 of people just emerged from a long period of economy and restricted action, and full of hope and confidence and vigor, it is safe to say that the year just opening will make pessimism and distrust a risky line of policy to pursue.—*Exchange.*

MAN'S AGE.

Few men die of age. Almost all die of disappointment, passion, mental or bodily toil, or accident. The common expression "choked with passion", has no exaggeration in it; for even though not suddenly fatal, strong passion shortens life. Strongbodied men often die young—weak men often live longer than the strong, for the strong use their strength, and the weak have none to use. The latter take care of themselves, the former do not. As it is with the body so it is with the mind and temper. The strong are apt to break, or, like the candle, to run; the weak to run out. The inferior animals which live temperate lives have generally their prescribed number of years. The horse lives twenty-five; the ox fifteen or twenty; the dog ten or twelve; the rabbit eight; the guinea-pig six or seven. Those numbers all bear a similar proportion to the time the animal takes to grow to its full size. But man, of the animals, is one that seldom lives this average. He ought to live a hundred years, according to physical law, for five times twenty are a hundred, but instead of that he scarcely reaches on an average four times his growing period; the cat six times; the rabbit even eight times the standard of measurement. The reason is obvious—man is not only the most irregular and most intemperate, but the most laborious and hard-worked of all animals. He is also the most irritable of all the animals; and there is reason to believe, though we cannot tell what an animal secretly feels, that more than any other animal man cherishes wrath to keep it warm, and consumes himself with the fire of his own secret reflection.



Graphite

VOL. II.

JULY, 1900.

No. 8.

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DUDLEY A. JOHNSON,

the subject of our sketch, an alive, kicking and hustling representative of the Dixon Company at Chicago, was born in the year 1867, at New Albany, Ind., across the way from the Blue Grass state.

When six months old he was taken by his grandparents to a farm near Bloomington, Ind., and there, at the age of six, began his schooling, walking three miles to the country schoolhouse. At the age of eight he was taken by an aunt to Sullivan, Ind., where he continued his schooling.

When ten years old he found for himself a position in a clothing store, where he worked from six o'clock until nine o'clock in the morning, then went to school, and after school returned to the store and worked until ten o'clock every night. For this work he received one dollar per week. This he continued until the age of fourteen, when he left school, but continued working in the store regularly at a salary of two dollars per week. A year later he was offered two dollars and fifty cents per week by a crockery house, which he accepted, and a year later still a St. Louis contractor came to Sullivan for the purpose of establishing a telephone exchange, and Master Johnson, being very much interested in anything progressive, accepted a position with the contractor at one dollar and fifty cents per week. His first work was digging post holes, then he helped string wires, put up the boxes and fit up the exchange. This work took about six months, and when it was all finished he was given charge of the office at a salary of ten dollars per week. Later this was increased to twelve dollars per week, but finding that confinement was not beneficial to his health he resigned and started for Chicago, where he

procured a position with a board of trade firm. The third night after he had taken this position the firm was very busy, and the proprietor told him that inasmuch as he would have to work that night he could go out and get his supper at the expense of the firm. Upon his return he was asked how much he had spent for his supper, and he said one dollar and seventy-five cents. His employer looked at him in astonishment and said, "Look here, young man! we thought we were hiring an errand boy and it seems we have hired an epicure!" The next day Dudley was looking for another job.

A few days later he strolled into the stationery house of Brown, Pettibone & Kelly, now known as P. F. Pettibone & Company; he introduced himself to Mr. Pettibone, the manager, and said he wanted to learn the stationery business. Mr. Pettibone picked up a flat opening blank book, which was lying on his desk, and which was, at that time, a brand new thing, and said, "Go out and see what you can do with this." He did so, and that week made fourteen dollars; the next week, twenty-eight dollars, and the following week he was given a permanent position at ten dollars per week. This was in 1885. He continued doing this work until 1890, when the buyer of the house resigned, and Mr. Johnson was installed in his place, being given the management of the stationery department. He remained there until 1897, when he accepted a position offered by the Holyoke Envelope Company, as their western representative. The following year he resigned in order to form a connection with the Dixon Company.

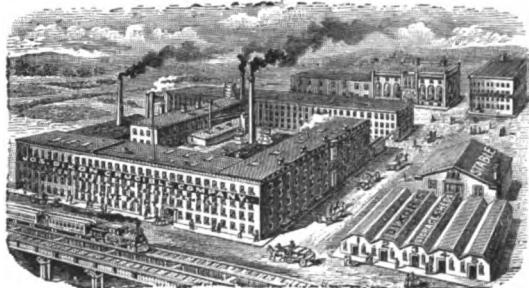
To those who know his career since, he needs no introduction. With the trade he is very popular and highly respected. Among his intimate friends he is beloved and trusted. As a husband and father he stands among the best.

Although when he connected himself with the Dixon Company he expected to devote his entire time to the educational interests of the Dixon Company among the schools, with a view of introducing the Dixon lead pencils, he nevertheless has found time to make himself exceedingly useful in other fields.

The introduction to the bicycle trade of liquid brazing is largely due to his untiring efforts. He interviewed the furnace maker and the bicycle manufacturer, and furnished the Dixon Company with data so that proper brazing crucibles were made without difficulty. He then interested the publishers of the bicycle trade papers and the liquid brazing process was given to the world and is in use wherever bicycles are manufactured.

ESTABLISHED 1827.

INCORPORATED 1868.



JOSEPH DIXON CRUCIBLE CO. JERSEY CITY, N. J., U. S. A.

SALESROOMS AT

68 Reade St., New-York. 1020 Arch St., Philadelphia.
304 Market St., San Francisco. 28 Victoria St., London.

RESIDENT REPRESENTATIVES :

BOSTON. CHICAGO. ST. LOUIS. PITTSBURG.
PARIS. HAMBURG. VIENNA.

GRAPHITE MINES AND MILLS AT TICONDEROGA, N. Y.
CEDAR MILLS AT CRYSTAL RIVER, FLA.

OFFICERS:

E. F. C. YOUNG, JOHN A. WALKER, GEO. E. LONG,
President. *Vice Pres. and Treas.* *Secretary.*

JERSEY CITY, N. J., July, 1900.

OF THE RIGHT STUFF.

There are many would-be business men who may be able to give the writer of the following letter cards and spades, so far as grammar and spelling goes, but he is away ahead of many in good business gumption.

Sometimes we receive an order and the party is unknown to us and not mentioned, or if mentioned, not rated in the commercial agency books. Then we send an advance bill, with a polite note, giving reasons. We are sorry to add that too often we get a reply back cancelling the order and with remarks that are forceable enough, but unprintable without scouring the paper. The writer of the following letter is of different breed:

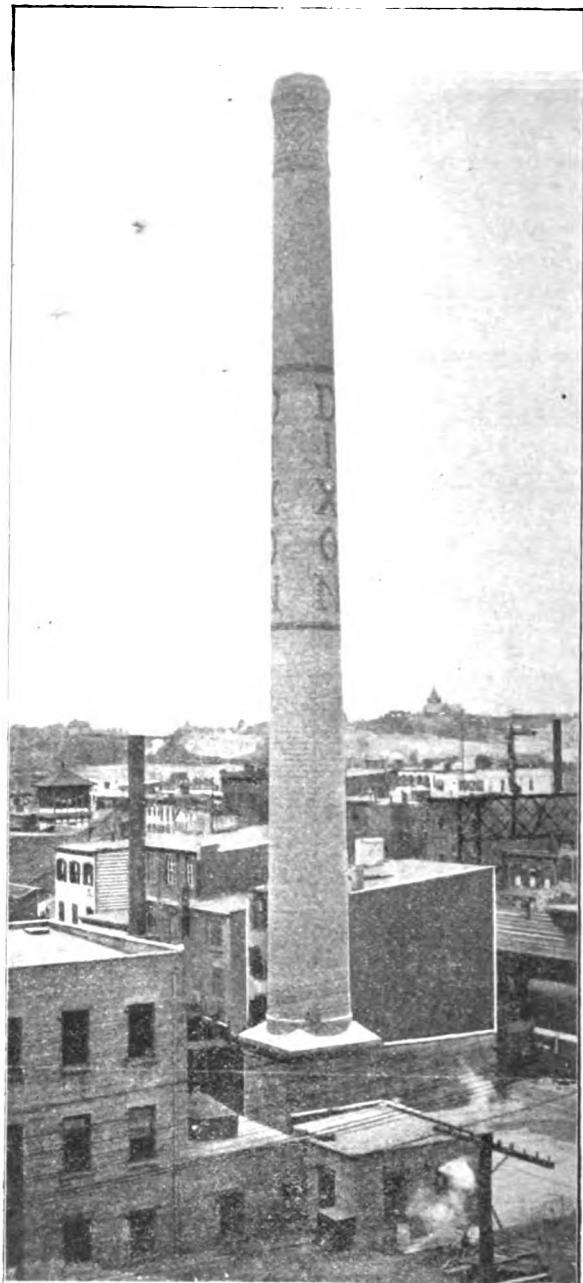
Josif. Dixon Crucible. Co.

Gentlemen. Yours of the 24th at hand and contents noted. you did rite in sending your bil in advance of your shipment and the same is agreeabal to me you will find inclosed a cashiears check for the amount 17 60 and i wish you to ship the graphite at once from pier 36 east river as that will get it here in the shortest time and I am in a great hury.

I furnished the brad street co Boston with a statement of my afairs they are not very good but i think you will bee pleased to doo bisnes with me when you get aquainted. If I have good sucess with the paint could i not make arrangements with you to controol this section of cuntry no one handles it here but if i work up a traid there is always some who wants to jump in and spoil it.

remember if the goods are all rite and like sample I had just as soon pay before as after.

Yours, Respectfully —



The above cut shows the chimney for the new Dixon power plant. At the present time we are running five steam plants at our Jersey City works, and it is our intention to concentrate the five into one complete and central power plant.

The chimney is something comparatively new in the United States, although extensively used in Europe. The chimney is built of radially molded bricks, perforated as

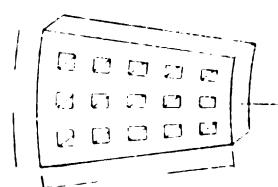


FIG. 1.

shown in fig. 1. The perforations insure regularity of draft by the prevention of radiation through the walls and diminish susceptibility to atmospheric changes.

The bricks are molded in sizes and shapes of sufficient

number for the construction of a chimney of any diameter and of conforming decreasing radius to the progress of the structural elevation.

The perforations are intended not only to form dead air spaces, but also to give a better hold to the mortar, and, it is said, to increase the joint adhesion three-fold.

While seemingly a chimney constructed of such brick would have less strength than one built of solid brick, yet, according to tests made, the crushing resistance of perforated brick and unperforated brick, of the same material, was 5,035 and 4,978 pounds, per square inch respectively. Furthermore, as the perforated bricks are much larger than the common form, there are fewer joints. Altogether the Dixon chimney is a most excellent piece of engineering work and was constructed by The Alphons Custodis Chimney Construction Company of New York.

COAL AT ONE END, POWER AT THE OTHER—THE LUBRICANT IN BETWEEN.

Plain and practical remarks upon lubrication are always of interest and value to the extensive user of machinery, and ought to be of proportionate value to all users of machinery. We quote from a paper read at a railroad club, and incidently sprinkle in some graphite as we go along.

All men are wrong about something. A few men have found out that the coal they burn at one end of their plant, and the power they get at the other depends on the oil they use between; the rest treat oil as a trifle. A few men have also found out that the addition of 10 to 15 per cent. of Dixon's Pure Flake Graphite to the oil or grease used will enable the oil or grease to do several times more work. Other men are finding this out more slowly. A few don't care a continental.

A good lubricant is a trifle as to its cost, but it is not a trifle as to consequences. Consider what a lubricant is for—to save power in machinery. If the cost of a lubricant were one hundred times more, we would use it, but we would also study it. Even then the true question would be, not what lubricant costs least, but what lubricant saves most of power and machinery? The magnitude of lost power in machinery is variable; it is always large. It may, probably, be fairly estimated that one-half the power expended in the average case, whether in mill or shop, is wasted in lost work, being consumed in overcoming the friction of surfaces. The real value of a lubricant to the user depends upon the value of power saved by its use. To the man running a one-horse thresher it may matter but little whether the bearings of the old machine are lubricated or not, although there might be an increase in the day's output and a less tired nag if they were. To the large user of power poor and inefficient lubrication means enormous waste of power and costs for repairs. Practical experience is far superior to theory, and while it has been most thoroughly demonstrated that an oil or grease is necessary for saving power and preventing wear, it has been just as thoroughly demonstrated that Dixon's Pure Flake Graphite is the only solid lubricant that largely enhances the lubricating value of oils and greases. Furthermore, where this graphite is used a cheaper or lower grade of oil or grease can be used and the expense of lubrication reduced as well as power saved.

Productions of the Dixon Crucible Co.

Dixon's Black-Lead Crucibles and Retorts.

All sizes and for all purposes. Bowls, Dippers, Stirrers, Stoppers, Nozzles, Muffles, Etc.

Dixon's Brazing Crucibles.

Made in several shapes for dip-brazing.

Dixon's Graphite Boxes and Covers.

For baking carbons and filaments for electric lighting.

Dixon's Fine Office and Drawing Pencils.

Unequalled for smooth, tough leads and uniformity of grading.

Dixon's Colored Crayons.

In wood or solid. For schools, railroads, editors or factory.

Dixon's Lumber Leads.

Black or colors; for green or dry lumber.

Dixon's Felt Erasive Rubber.

For erasing pencil marks, type-writer work, or ink.

Dixon's Carburet of Iron Stove Polish.

The old reliable; in cake or bulk form.

Dixon's Pure Flake Lubricating Graphite.

A solid lubricant for all frictional surfaces.

Dixon's Special Graphite No. 635.

For lubricating cylinders of gas engines and all close or delicate mechanical parts.

Dixon's Electrotyping Graphite.

Used by the majority of practical electrotypers of this country.

Dixon's Hatter's Lead.

For coloring hat bodies.

Dixon's Plumbago for Shot Polishing.

Dixon's Plumbago for Powder Glazing.

Dixon's Plumbago Foundry Facings.

Dixon's Yacht Plumbago.

For lubricating and smoothing bottoms of yachts.

Dixon's Graphite Axle Grease.

Better and cleaner than castor oil for trucks, wagons, carriages.

Dixon's Graphite Waterproof Grease.

For use on trolley car gears which are enclosed in a gear case.

Dixon's Graphited Oil.

For use in all places where the use of a grease is impracticable.

Dixon's Graphite Cup Greases.

For use in cups or open bearings, on spindles, shafting, etc.

Dixon's Oiled Graphite.

Dixon's Lubricating Compound.

For gears of electric motors.

Dixon's Silica-Graphite Paint.

For metal or wood-work, roofs, bridges, telegraph and trolley poles, smoke-stacks, boiler fronts, and iron construction work.

Dixon's Graphite Pipe-Joint Compound.

Better and cheaper than red lead. For steam, gas and water piping, smearing gaskets and flanges.

Dixon's Cycle Chain Graphites.

For perfectly lubricating chains and gears of bicycles.

Dixon's Graphitoleo.

For lubricating bicycle chains, sprockets, pivots and pins; gun locks, and for general use.

Dixon's Commutator Graphite.

Will glaze the commutator with the finish so much desired by electrical engineers.

Dixon's Anti-Flux Brazing Graphite.

To prevent the spelter from adhering when brazing.

Dixon's Crucible Clay and Graphite Mixture.

For lining and repairing furnaces and fire boxes.

Dixon's Stove Cement.

For repairing stove or range lining.

Dixon's Traction Belt Dressing.

For preventing belts from slipping and thoroughly preserving the leather and protecting its elasticity.

Dixon's Solid Belt Dressing.

Convenient for those who prefer a solid dressing.

Dixon's Graphite Resistance Rods.

From one-eighth to one inch diameter; any resistance required.

Dixon's Graphite Products for Electricians.

Special circulars with detailed information sent on request.

Our Vice-President's Department.

MONEY EARNING AND MONEY SAVING.

Every one must earn money, if he doesn't he must receive charity, or go to the wall; but not every one who earns money is a money maker. Gifts are lavishly distributed by nature. Some are legal, some clerical, some studious, some are engineers, some are executives, some thinkers, some drift, and some make the way for the rest.

In all professions some rise to the sovereign heights. There are statesmen, lawyers, painters, poets, of the first rank, who achieve the supreme successes. So of the money makers, a chosen few climb to the top rank. They are looked at and envied, but not necessarily is their position to be coveted. To attain the first rank as a money maker, in addition to the natural gifts, there is necessary almost superhuman industry—intense preoccupation of mind to the exclusion of nobler thoughts. Because of supreme money-making success one's personality need not necessarily be agreeable; sometimes it is quite the contrary. It means very strong native powers, intense application and ambition on not the highest plane; a sacrifice of one's self to the ruling passion. To the community the great money maker is a boon. He creates, plans, devises, thinks and sets in order for thousands and communities. As the statesman thinks for the nation, so this man must think for the business community—but it is a dizzy place, full of anxious years. The load carried is very heavy. Let the rank and file then accept their lot; their days are happier, their nights full of better sleep; they can pick up the thousand and one threads of social life, which the great leader has neither the time nor the aptitude for.

MEMORIES OF EUROPE.

These resplendent summer days—with green leaves, flowing waters, witching nights—have the vacation atmosphere. They remind us that a year ago to-day we were at Como, Italy. We came to Europe exclusively on a business errand and it was fully accomplished, with a few days to spare, so we said: let's go back via the lakes Como, Maggiore and Lugano, over the Alps into Switzerland and then Paris and London.

The three lakes were simply seraphic. Como perhaps taking the palm for a delicacy of refinement, while Maggiore was first in breadth and sense of importance. We saw Como under a brilliant Italian sun and Maggiore in a blinding rain. There are reminders of Garibaldi at Maggiore, also a large silk industry; but for gentle beauty it is difficult to imagine anything more fascinating than Como at Bellajio.

Through the lakes and arriving at Domodossola we took the diligence over the Alps, via the Simplon pass. The drive over took part of two days—its highest point being 6,590 feet above sea level. The scenery was simply stupendous. At Breig we took the second diligence and continued over the Furka pass, where the highest point is 9,000 feet.

Staying over night at the Rhone Glacier Hotel, in the morning we took another diligence via the Grimsel pass. The road zigzagged up the lofty mountain till one saw about the whole earth. Billows and billows of mountains lay before us. Our path lay over deep snow, often forty feet high. The sun retired and gray clouds and rain came, giving us a wild, wild afternoon, ending with driving into the typical Swiss village of Meiringen. Here we took the railway again, stopping a moment at Interlaken to see the unrivaled Jungfrau; then over Lake Thun to Berne, and thence by short cut to Paris, then London, Liverpool and Jersey City once more. Our business errands were accomplished, and our brilliant little three or four days—holidays by the way—gave us never to be forgotten pleasure. A quickly flying year has passed since—the busy year, the year of the great boom—and in the midst of all its agreeable work and high pressure activity it has been pleasant to look back and remember Como, Maggiore, Lugano, the Simplon, the Furka, Meiringen, Interlaken, the Jungfrau and the Grimsel.

DIXON'S TICONDEROGA FLAKE GRAPHITE.

Flake graphite, or rather pure flake graphite, is a Dixon product, and the mines are at Ticonderoga, N. Y.

It is no drawback to the situation that the shortest road thither is by boat through Lake George, sometimes called Lake Horicon.

We were there yesterday and took the short cut and had two hours on the lake. The weather was perfect and the lake was in its finest form. From the top window of the mill one can get a lake and mountain view not rivalled in America, and not in Europe outside of Switzerland.

We are opening new veins at the mines, building a new mill and providing for a large increase in the output.

This pure flake graphite does not, to our knowledge, occur elsewhere. It is a Dixon exclusive product, and is now, by the enterprise of the Dixon Co., scattered to the ends of the earth.

It is simply unrivaled as a lubricant and its popularity having heretofore increased on the arithmetical ratio has now passed that point and is on the jump and leap on geometrical progress lines.

FOUNDRY FACINGS.

Foundry facings is an unmeaning subject to non-foundry readers—but Graphite goes to many foundries, and to them we would like to say we are experts and well skilled in the matter of "blocking," of "silver lead," of "facings," of "dry sand work," of "green sand work," of "loam work," of "flat moldings," and know all the technique of what is wanted to dress the sand mold. We have eight or ten most excellent numbers which many readers will recognize, and the point of this writing is to invite correspondence. There are our Nos. 5772, 6726, 2441, 4947, 5948, 604—all fine sellers and well known.

Aug 10 1900

Graphite

VOL. II.

AUGUST, 1900.

No. 9.

Issued in the interest of Dixon's Graphite Productions, and for the purpose of establishing a better understanding in regard to the different forms of Graphite and their respective uses.

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THE BOY AND THE SCIENTIST.

It is an interesting commentary on our boasted success in the cross-examination of nature, that, after centuries of recorded study, and many other centuries of which there is no record, there are many questions to-day that we cannot answer except in phrases that begin: "It is believed that—," or: "This much we know—"

Imagine a scientist of to-day undergoing cross-examination by a bright ten-year-old boy. It would be something like this:

B.—What are the stars?

S.—Other worlds like ours in different stages of heat and development.

B.—How did they get there?

S.—I don't know.

B.—What keeps them there?

S.—The laws of inertia and gravitation.

B.—What is gravitation?

S.—The attraction of one body on another.

B.—Why should they attract each other?

S.—I don't know.

B.—What is fire?

S.—Combustion or the evidence of it.

B.—What is combustion?

S.—The rapid combination of oxygen with carbon, or other substances.

B.—Why should they combine, and what makes them combine?

S.—I don't know.

B.—What is light?

S. (with renewed confidence)—The sensation produced by a certain wave motion in the ether.

B.—What is the ether?

S.—I don't know.

B.—What is heat?

S.—The energy of molecular motion.

B.—What do you mean?

S.—Well, I can't answer much better than that in a few words; heat, as you mean it, is the result of an acceleration of the normal motion of the molecules of a substance.

B.—Why?

S.—I don't know *why*, it just *is*; it's a natural law. The heat you feel from the fire is radiated through the ether.



AUGUST, 1900.

No. 9.

B.—What is — ?

S. (interrupting)—I don't know how it is radiated, and I don't know what the ether is.

B.—What is electricity?

S. (desperately)—I don't know; maybe a form of motion; maybe a condition of molecular arrangement; maybe a condition of ether stress. I don't know what it is. Go away and don't bother me. I'm writing a book about it.

—*Everybody's Magazine.*

ANENT GRAPHITE PAINT.

ROCHESTER WATER COMPANY.

ROCHESTER, Minn., April 30, 1900.

Joseph Dixon Crucible Company:

Gentlemen—In regard to your Silica-Graphite Paint would say that we painted our standpipe with it in 1894, and as yet the paint shows almost no sign of wear. It is good certainly for three or four years more.

Yours truly,

R. H. MILLS, Supt.

*

No. 44 Wall Street,
NEW YORK CITY, May 4, 1900.)

Joseph Dixon Crucible Company:

Gentlemen—Replying to your inquiry as to my experience with Dixon's Silica-Graphite Paint for the exterior of water towers, would say that I have had eight water towers painted, two coats each, with your Graphite Paint, and find one gallon of this paint covers 250 square feet of surface with two coats. Two of these towers were painted in 1898, and recent examinations show them to be in good condition.

Yours truly, PERCY C. HORD.

*

THE WALLINGFORD, 1606 Pacific Avenue.

Dr. J. B. Thomas, owner,

Residence, No. 640 17th Street, Phila.

PHILADELPHIA, Pa., March 31, 1900.

Joseph Dixon Crucible Company:

Gentlemen—Replying to your inquiry of recent date will say: September, 1888, I acquired a property that was much in need of repairs, painting as well as in other ways.

I painted the roof with your Graphite Paint, and in examining it last fall—eleven years afterwards—found it in good condition.

I recently painted all my roofs with your paint, both at Atlantic City and here.

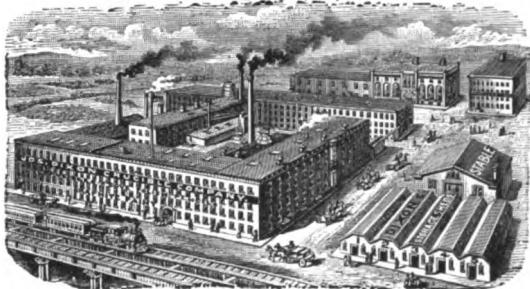
Very truly,

J. B. THOMAS, M. D.

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President *Vice Pres. and Treas.* *Secretary*.

JERSEY CITY, N. J., August 1900.

HABITS OF ACCURACY.

"There are certain characteristics which all admit to be excellent in their way, but which few persons regard as serious and binding duties to cultivate. Accuracy is one of these."—*Philadelphia Ledger*.

Exactly so, and that assertion ought to be made very frequently in the hearing of young men. They fail to appreciate both accuracy and thoroughness. A slipshod man will lead a slipshod life. Among the secrets of success accuracy stands close to the top, and thoroughness comes next. With those two qualities a youngster has a pretty fair start in life.

—*N. Y. Herald*.

Our German friends say: "Aller guten Dinge sind drei," so to the qualities of accuracy and thoroughness we would add that of promptness. Accuracy and thoroughness in a man are often handicapped by a lack of promptness. A clerk does not think it counts against him if he is five or ten minutes late; a bookkeeper knows his firm desires the trade balance on a certain day, yet he does not get it out till a day or two after. "Its time enough," he says. A salesman reaches town and finds the weather unpleasant and waits for sunshine, and another salesman gets ahead of him. The head of a department or a superintendent gets an order from the office and through indolence or habit of procrastinating lays it aside until reminded of it by his superior. A man ought to be as prompt in all business matters as he is to hit a snake on the head. A man accurate, thorough and prompt will "get there" in spite of fate.

The butcher is a bloody man,
His looks gives us a fright;
With Dixon's pencil blue he kills
The choicest things we write.

Marco Morrow in *The Philistine*, as he should have written it.



BROADWAY-CHAMBERS OFFICE BUILDING.

The importance of perfectly protecting the steel work of the modern office building, has received the attention of the foremost consulting engineers and architects of the world.

Facts as to the great durability of Dixon's Silica-Graphite Paint in its use for over 30 years all over the world under different and unusually severe conditions of service, has led to its specification and use on hundreds of steel constructed buildings, viaducts and bridges.

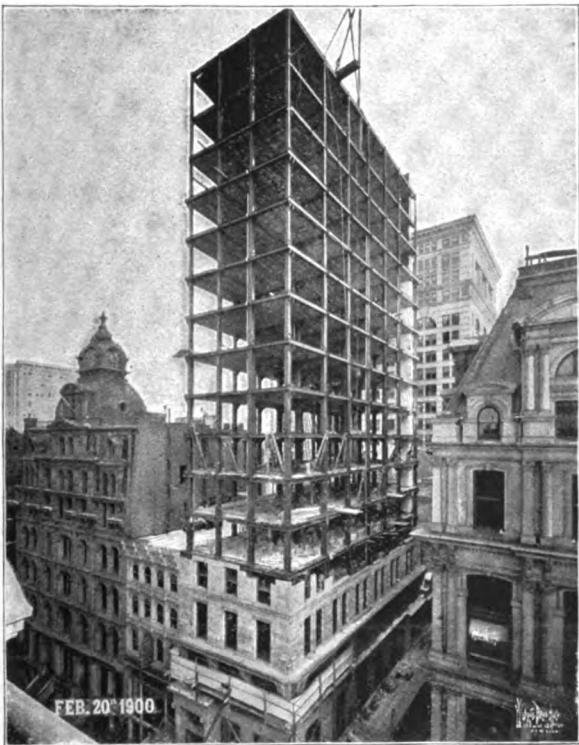
The handsome appearance of Dixon's Silica-Graphite Paint on steel work of the Broadway-Chambers Office Building, New York City, designed by Mr. Cass Gilbert, architect, and constructed by the Geo. A. Fuller Company, secured for it the unqualified endorsement of many prominent architects, consulting engineers and contractors.

OLD PROVERBS AMPLIFIED.

"What God left out man can't put in," is an old proverb. A fool born rich may be sent to college, after college he become a professor, or circumstances may even place him in the presidential chair, but if he was born a fool he remains a fool still, for learning has not made him wise. Wit is not learned, wisdom is not learned. If it were possible for a wise man to get into the presidential chair he would remain there for life. But no good man can ever be made president, for the money power would be against him unless there was a grand uprising of the people after political bosses have all but ruined the country. To be available for president one must be as a human key that political leaders can open the White House with. "Learning" does not make an inventor, learning can never put sense where sense does not exist. There is no knowledge in books nor in teaching. Young people should be trained, not stuffed with what they cannot understand. To learn a thing is not to know that thing. —*Wade's Truth and Opinion*.

A GOOD WORD FOR HEAT.

In these sultry August days it is pleasant to know that after all heat is one of our very best friends, if not the very best. In an interesting article on the peculiarities of heat *Locomotive Engineering* says: "The manifestations of heat whose sensations are so familiar to every living creature represent some of the most important phenomena in the universe. Heat not only keeps our bodies comfortable, cooks our meals and creates steam to operate our factories and moves our trains—it performs nearly all the functions that make the world habitable. In the form of transparent vapor, heat raises the water that forms clouds and saturates the atmosphere so that rain falls to fertilize the earth. The rain falls at high levels and makes our running brooks and rivers that drive mill wheels and carry burdens of merchandise on their buoyant depth. Heat moves the air and creates the currents of wind that drive our ships and force the purifying gases of which air is composed into every place where lurking disease germs linger awaiting victims. It also performs numerous other operations that are of the highest importance in the economy of nature."



AMERICAN EXCHANGE NATIONAL BANK BUILDING.

The illustration shows steel construction of the million dollar office building of the American Exchange National Bank. This building is one of the most impressive examples of good architecture in the financial district, being designed by the great architects, Messrs. Clinton & Russell.

In the selection of the very best of building material, the Dixon's Silica-Graphite Paint was selected for the protection of the steel work. The priming coat at the mill was of the dark red paint (color No. 3), and erection coat of the slate or natural color paint (color No. 2).

Messrs. Post & McCord, contractors for steel work, reported that the great covering capacity of the paint proved our claim as to its economy well founded.

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For gears of electric motors.

Dixon's Silica-Graphite Paint.

For metal or wood-work, roofs, bridges, telegraph and trolley poles, smoke-stacks, boiler fronts, and iron construction work.

Dixon's Graphite Pipe-Joint Compound.

Better and cheaper than red lead. For steam, gas and water piping, smearing gaskets and flanges.

Dixon's Cycle Chain Graphites.

For perfectly lubricating chains and gears of bicycles.

Dixon's Graphitoleo.

For lubricating bicycle chains, sprockets, pivots and pins; gun locks, and for general use.

Dixon's Commutator Graphite.

Will glaze the commutator with the finish so much desired by electrical engineers.

Dixon's Anti-Flux Brazing Graphite.

To prevent the spelter from adhering when brazing.

Dixon's Crucible Clay and Graphite Mixture.

For lining and repairing furnaces and fire boxes.

Dixon's Stove Cement.

For repairing stove or range lining.

Dixon's Traction Belt Dressing.

For preventing belts from slipping and thoroughly preserving the leather and protecting its elasticity.

Dixon's Solid Belt Dressing.

Convenient for those who prefer a solid dressing.

Dixon's Graphite Resistance Rods.

From one-eighth to one inch diameter; any resistance required.

Dixon's Graphite Products for Electricians.

Special circulars with detailed information sent on request.

VERY MUCH ALIVE.

At the meeting of the American Foundrymen's Association, Chicago, June 1900, one of the delegates said:

"Plumbago blacking, it seems, is only a memory. Molders hardly ever see or handle any nowadays. Substitutes have largely taken its place, for like any other article that is dear, a substitute is sure to be provided. The blackings of the present day are composed to a great extent of common cement, pulverized anthracite, charcoal, soapstone and other cheap minerals, and it is a question if they do not cost more than they are intrinsically worth. Some of them peel very well indeed, but the great majority of cheap blackings do not peel well and are difficult to work in a mold. It would be worth while for someone statistically inclined to figure out how much longer it took a molder to properly slick up a mold—if such a thing is possible—with a poor blacking, than if he had a good quality, and see if the difference in time, not to speak of the results, would not buy a good article. Castings are certainly much harder to clean with poor blacking. If the sand fuses—as it is sure to do on heavy work—a very bad job is the result, and, in addition to the molders' extra time on the mold, it costs more to clean the casting, and then the results are not fully satisfactory to anybody concerned, oftentimes resulting in the loss of a valuable customer."

Every foundryman should strive for that which will give his shop the name of turning out the best and nicest castings in his vicinity. 'Tis the kind of policy that easily pays, particularly shops that handle machinery castings.

As a matter of fact the Dixon Company have of late had a steadily growing trade for its India Silver Lead Facings. Molders have without doubt found out that it does not pay to use cheap mineral facings. Molders have learned that cheap mineral facings do cost a great deal more than they are intrinsically worth.

The Dixon Company manufacture a large variety of plumbago facings, which very successfully meet all varieties of work and the prices are low, quality considered. It will easily pay any founder to carefully investigate the subject.

PAINTS OF YESTERDAY AND TO-DAY.

How many owners of property have considered the fact that fuel of to-day differs very largely from the fuel of the past, and that difference in fuel means a very great difference between the durability of paints in the past and the paints at the present time.

When wood was plentiful and cheap it formed a suitable fuel, and its smoke carried little if any of the destructive powers of the present sulphur laden smoke, which comes from the burning of coal.

With the change from wood to coal, the gases given out from the sources of combustion also change. The smoke of a wood-fire contains no sulphur. The gases from a coal fire always contain sulphur. Lead paints are specially susceptible to attack of sulphuric compounds, many other pigments are likewise affected. The acid from the combining of the sulphur with the moisture in the air comes down upon the roofs and iron structures that are not properly protected and at once set up corrosion on whatever metal they come in contact with.

It is for this reason that an inert pigment, like graphite, has found such great favor during the past few years.

Surfaces properly painted with Dixon's Silica-Graphite Paint offer the very best resistance to the paint-destroying agencies that are in the air at the present time. This seems to be the opinion of science and practice.

PENCIL VS. PEN AND INK POT.

One day just after the editor of a great daily paper had mislaid his Dixon "American Graphite," and been obliged to use a pen again, he sat down and wrote as follows:

"The form of the stylus or steel pen changes, and the pigment and its vehicle vary, but this otherwise enlightened and lucky generation is as much the slave and the victim of the ink pot with its nasty contents, as was the mediaeval monk, the Roman, or the Greek, or the Egyptian under the first dynasty, or the Chinamen of the time of Lien-Hwang, the Celestial.

"How many million lifetime units of muscular and nervous energy have been expended unnecessarily in the mere act of stretching the hand over to the ink-stand to dip the pen in this black liquid, relic of primeval barbarism? How many precious souls have been sent to perdition in consequence of the emotional upheaval over the besmeared fingers, the blot on the fair page or parchment, the ink-bottle upset by the office cat! No wonder Martin Luther hurled his ink-pot at the devil; that utensil fairly belongs to sheol.

"Away with pen and ink-pot, and even the fountain pen! My kingdom for a lead pencil!"

THE CAN WITH THE RED LABEL.

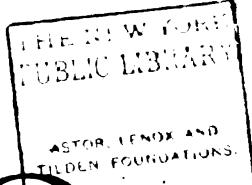
An engineer on one of the large railroads running into New York city said the other day, "When I get the square tin can with the red label, then I am sure it is graphite." The speaker is an engineer who has several times taken prizes for economy in running his engine, and who is often called into consultation, as an expert "mill doctor," by the mill owners and fire department of the town where he makes his home, but, notwithstanding all his practical knowledge, he feels that his best safeguard, when it comes to the question of lubricating graphite, is in the label of the Joseph Dixon Crucible Company.

This point is worth considering by every one who uses lubricating graphite.

Don't buy your graphite in a paper bag. Don't send your empty can to be refilled; but insist that your dealer gives the square tin can with the red label, bearing the name of the Joseph Dixon Crucible Company, and then you can rest assured that it is graphite, and that it is "Dixon's Ticonderoga Flake Graphite," which is acknowledged to be the best lubricant by the engineers of the whole civilized world.

Owing to press of business Vice President Walker has been unable to furnish *Graphite* with his quota of copy for this number, and "be the same token," if he had it would have been crowded out.

VACATION time brings the Dixon salesmen in and takes the Dixon office people out. As in matrimony, the outs want to get in and the ins want to get out.



Graphite

VOL. II.

SEPTEMBER, 1900.

No. 10.

Issued in the interest of Dixon's Graphite Productions, and for the purpose of establishing a better understanding in regard to the different forms of Graphite and their respective uses.

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A GOOD STORY WELL TOLD.

The engineer of a railway powerhouse writes as follows: "I am using Dixon's Pure Flake Lubricating Graphite on a 12x22x36 Cooper "Tandem," feeding it dry by using an old tallow cup, filling it once every day (it holds about three ounces); just before starting I open the valve on the cup and the steam does the rest.

"By using graphite I am able to run six days with one quart of cylinder oil of fair quality. We intend putting cups on all the engines, so as to use graphite on them all.

"I have not had a chance to see the inside of the cylinder, but as soon as I do you will hear from me again; for if there was ever a good thing manufactured, Dixon's Lubricating Graphite is the thing."

Later on he wrote again as follows:

"To-day I have taken off the heads from our tandem engine and I find the cylinders are in the finest condition after a run of six months. All the parts are as bright as can be, yet show no signs of wear or cutting—thanks to Dixon's Pure Flake Graphite. I consider this graphite the handiest article in an engine-room for anything that sticks or squeaks or needs lubricating. Use Dixon's Flake Graphite is my advice."

GOSSIP.

One of the Dixon representatives reports as follows concerning Dixon's Pipe Joint Compound:

Pullman Palace Car Co. Works, Pullman, Ill.

Mr. Kerr, who has charge of all their steam fitting about the buildings is highly pleased about the way our Pipe Joint Compound is working, and says he has discarded the use of red lead entirely. He has put through a requisition for another keg of the Pipe Joint Compound, and we expect the order to reach us here in a day or two. He says his assistant, Mr. J. A. Strom, has gone to Buffalo to do a lot of overhauling of the steam work at the Pullman Buffalo Works. These shops were formerly run by the Wagner Palace Car Co., but will hereafter be run by the Pullman Palace Car Co. as a repair shop.

He also reports on Dixon's Pure Flake Lubricating Graphite, as follows:

Pullman Palace Car Works, Pullman, Ill.

Mr. G. C. Bushman, Supt. Millwrights. This gentleman, Mr. Bushman, is using quite a little of our P. L. He reports that in one instance he had to operate a steel journal in a steel bearing and that he had all kinds of trouble with oil lubrication, but that our Flake Graphite, after it had gotten thoroughly worked in and formed a coating on the journal, did away with all the trouble. The bearing is now running in nice shape.

FALL PAINTING.

A good time to paint is when the surfaces show wear, a coat of good paint at that time means a saving in the future. Fall painting is specially recommended for two reasons. The weather is then usually fine and not subject to sudden and heavy downpours of rain which are liable to wash off newly applied paint, and there is a freedom from the heavy dust-storms which settle on new paint and absorb the oil. Then again paint applied in the fall has time to become thoroughly solidified into a tough, leather-like skin before being subjected to the burning heat of the summer sun. Practise and theory both agree that the fall of the year is a most desirable time to apply oil paints to roofs, bridges and all surfaces requiring a protective paint.

Naturally we recommend Dixon's Silica-Graphite Paint. We recommend it because we make it and know all about it and because we have used it for over 30 years and know that surfaces properly painted have not required repainting in 10 to 20 years.

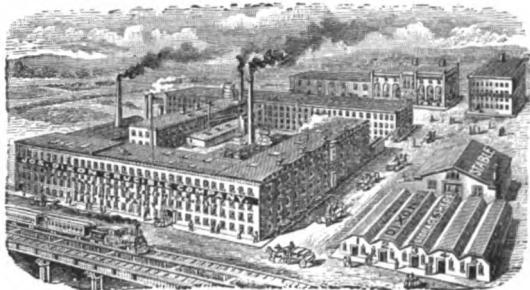


If it's better to have a Dixon American Graphite Pencil that marks easily and wears well, or "any old thing" in the way of a pencil, and then get mad and nervous.

If it's better to paint your roof with Dixon's Silica-Graphite Paint and not have to repaint it for the next ten years, or use some cheap stuff and repaint next year and find out that the *cost of labor alone* in repainting is several times the cost of the durable Dixon paint.

ESTABLISHED 1827.

INCORPORATED 1868.



JOSEPH DIXON CRUCIBLE CO. JERSEY CITY, N. J., U. S. A.

SALESROOMS AT

68 Reade St., New-York. 1020 Arch St., Philadelphia.
304 Market St., San Francisco. 28 Victoria St., London.

RESIDENT REPRESENTATIVES:

BOSTON. CHICAGO. ST. LOUIS. PITTSBURG.
PARIS. HAMBURG. VIENNA.

GRAPHITE MINES AND MILLS AT TICONDEROGA, N. Y.
CEDAR MILLS AT CRYSTAL RIVER, FLA.

OFFICERS:

E. F. C. YOUNG, JOHN A. WALKER, GEO. E. LONG,
President. *Vice Pres. and Treas.* *Secretary.*

JERSEY CITY, N. J., September 1900.

A SURPRISED PAINTER AND A PLEASED CUSTOMER.

A stationer in Western New York who handles the Dixon Pencils and knows them to be good, recently had occasion to use some paint for one of his buildings and wrote to the Dixon Company for information as to quantity required, method of applying, etc. The Dixon Company replied that for the surface mentioned five gallons would be sufficient. When the stationer's painter came to apply it he said there wasn't enough paint for the surface and that it would require eight or nine gallons at least. The stationer, however, had faith in what the Dixon Company had written him, and told the painter to go ahead and follow the Dixon Company's instructions literally. The painter did so and when the job was completed he had one gallon of paint left over. It is needless to say that the painter was surprised and pleased as well as the stationer. Furthermore, it was demonstrated that the claims for Dixon's Silica-Graphite Paint are founded on facts. Dixon's Silica-Graphite Paint is the most economical paint as well as the most durable, and covers more surface than any other paint.

HIS MISTAKE.

The *Denver Evening Post* says: Then rose the aged chieftain Neversweat, and cast both eyes on the assembled braves, and thus he spake:

"My children, I am old!"

The frosts of time relentlessly have chilled
The lubricating cups which oil my joints."

The poor and benighted Lo should have been up to date and used Dixon's Pure Flake Lubricating Graphite in his lubricating cups.

BUSINESS AS SHE WAS.

Whether the world is six thousand years old or six millions of years old, it's only a hundred years ago when the field of business enterprise was not only restricted, but the transaction of business within that field was slow and difficult. The merchant usually kept his own books, or, as he would have said, his own accounts. He didn't even dream of a typewriter—either the machine or the girl, but wrote all his letters with a quill, and when they were written let the ink dry or sprinkled it with sand and carefully poured the sand back into the wooden pepper box. There were then no envelopes, no postage stamps, no letter boxes in the street, no collection or delivery of the mail. When the letter was written (and we will own the penmanship and composition would put to the blush the efforts of the present generation), the paper was carefully folded, sealed with wax or a wafer, addressed and carried to the post office, where the postage was prepaid at rates which would now seem extortionate. The time required to send letters from New York to Boston was about a week, and there was no way of getting around that as there was no such thing as a telegraph line, and if any man had been born ahead of his time enough to even suggest the telephone he would have been put into a straight jacket or taken out and burned as being in league with old Nick. As for the luxury of a decent lead pencil—even that was unknown, although there were things called, by courtesy, lead pencils. The article most in vogue was the leaden "plummet," which some of our old citizens can still recall.

WHAT FRICTION COSTS.

Prof. J. Goodman, in a paper read before the Manchester Association of Engineers, said: "Out of every ton of fuel consumed for engine purposes, some 400 to 800 pounds are wasted in overcoming the friction of the working parts of the motor, and further, every machine driven by a motor also wastes a large percentage of the remaining power by its own friction. One would not be far short of the mark in saying that from 50 to 80 per cent. of the fuel is consumed in overcoming friction. This extremely wasteful state of affairs is most unsatisfactory, and, happily, can be greatly improved by a due observance of the laws of friction and lubrication."

Prof. Albert Kingsbury, in a paper read before the American Society of Mechanical Engineers, on "Experiments on the Friction of Screws," remarks that he "did not consider that the tests showed that any one of the metals developed less friction than any of the others, but the tests were especially interesting because of the great lessening of friction by means of Dixon's Pure Flake Graphite, which was used, as will be shown by the following:

LUBRICANT.	MINIMUM.	MAXIMUM.	MEAN.
LARD OIL09	.25	.11
(Heavy machinery.)			
OIL (MINERAL)11	.19	.14.3
(Heavy machinery.)			
OIL and GRAPHITE03	.15	.07
(Equal volumes.)			

Intelligent use of Dixon's Pure Flake Graphite means saving in coal, power, time, labor and money. It is indispensable in every power plant.

FOUNDRY FACINGS.

From an article prepared by Malcom McNaughton, of the Joseph Dixon Crucible Co., Jersey City, N. J., concerning the use of foundry facings and the quality demanded for different kinds of work, this journal condensed the following:

Molding is generally divided into four classes, to wit: Plate, green sand, dry sand and loam. This classification indicates not only the methods by which the castings are made, but serves in itself as a guide towards the selection of a suitable facing.

Plate molding is always used for light castings, and while it is within a certain sense of the word green sand molding, we have classified it by itself since it demands a different treatment in the application of facing from ordinary green sand molding.

Owing to the ornamental designs prevailing throughout plate molding, facing cannot be rubbed or brushed upon the surface of the mold without injuring the delicate lines of the design. In order to get a smooth casting the pattern is returned, or printed back, to its original position, after a coat of heavy facing, and followed by a coat of charcoal facing, has been evenly distributed over the mold with a blacking bag.

In green sand work a facing may be applied with a camel hair brush, by hand or dusted on with a bag, and afterwards "slicked" down. It should be noted here that since the castings in this class of work are so much heavier than those in plate molding, it is necessary to use a more refractory facing. Dry sand work may be divided into two branches, skin-dried molds, in which the surface of the mold coming in contact with the iron is dried—and dry sand molds, where the whole mold is dried by being placed in an oven or having fires built within or surrounding it. In each method different sand mixtures are used, in fact, such a variance exists in dry sand molding that but few shops pursue a similar course.

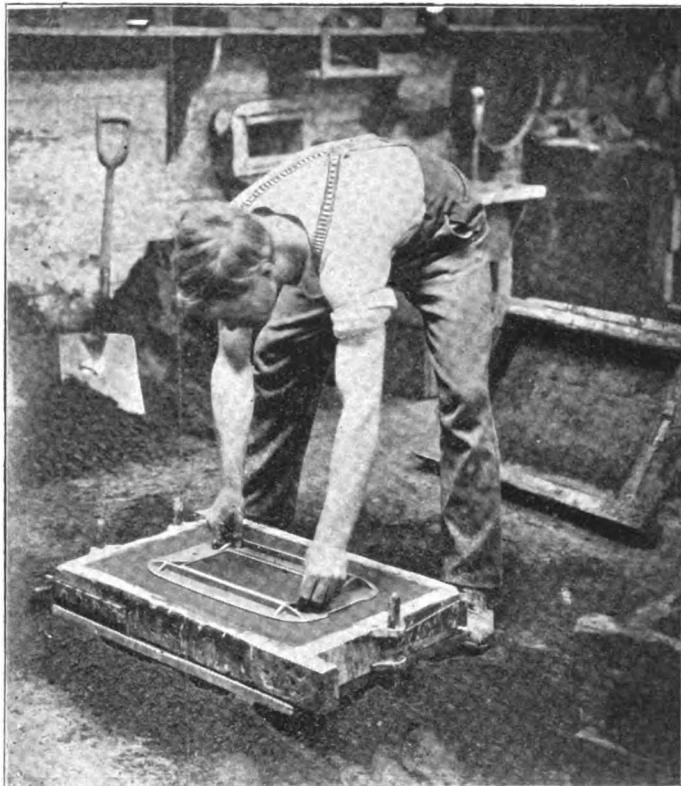
In loam molding patterns are largely done away with, and the material used for forming the mold must be one that is very flexible and readily follows the lines of the sweeps. This is very plainly seen in grooved drums and castings of a like character.

Before proceeding further let us discuss the theory upon which is based the use of foundry facings. The facing is, in the first place, put on the surface of a mold simply for the purpose of preventing adhesion of the metal to the sand of which the mold is composed. But besides the fact that it saves cleaning of the castings, it also gives them a far

better appearance, and the surfaces so treated are very much easier to work in the machine shop. Wherever metal burns into the sand it causes hard spots on the castings, which quickly dull the edges of cutting tools. The reason why graphite or plumbago facings or silver lead prevent this is as follows: Carbon is a combustible material, so that when the metal is poured into the mold, there is sufficient amount of air in the mold itself, and also carried in by the stream of molten metal to bring about a certain amount of combustion. You may have noticed that when a drop of water falls upon a warm stove, it rolls about until it is entirely evaporated. The water itself never comes in contact with the hot surface of the stove, being separated by a film of vapor. The condition which obtains here is precisely that which exists in the mold,—the facing begins to burn and a film of gas forms between the facing and the iron. This effectually prevents any adhesion of the metal to the sand, and just as long as this gas film exists no adhesion can possibly occur.

With regards to the difficulties to be met with in any foundry work, it is understood that a facing must burn in order to be effective, but at the same time if it burns too much, that is, gives off too much gas, we immediately get into difficulty. A proper facing will adhere perfectly to the sides of a mold, and will burn and form gas in a slow and regular manner; that is, burn just enough to furnish this little film of gas referred to above. We want to form the gas, but want to form only the least possible amount of it, and at the same time this gas must be formed during the entire time that the metal is in the fluid condition.

Another point following this is the fact that two bodies cannot occupy the same space at the same time, so that in using a cheap facing—which burns fast and gives out a large amount of gas—this gas is liable to become pocketed inside of the mold and so prevent the iron from filling the mold. This causes what are called "cold shuts" on castings. The ordinary cheap coal facings act in this way. One of the other difficulties in the use of improper facings is that of their running before the molten metal. Poor facings are not sufficiently adhesive to the sand mold surface. The hot iron, coming in contact with them, immediately dries out the sand, and if an inferior facing is in use, it will run and leave the mold surface bare. These two points alone will indicate to you why the Dixon Company make such a variety of facings. The conditions which exist in foundries are so various that it would be quite impossible even to make one facing for green sand work, and another for plate work, and that they be equally successful in different shops.



One foundry uses sand quite wet when compared with the practise in another shop. There is also a great difference in the character of the sands themselves, and there is also a great difference in the method of making the molds. In one shop the practice would be to ram the sand very much harder than in another shop. All these things have their bearing on the successful use of even a good facing.

Journal of American Foundrymen's Association.

THE ROMANCE OF BUSINESS.

A good business has no limit to where it leads.

Take the graphite industry—for instance—we are very proud of it. We make crucibles, and thus dip into the world of metallurgy and the thousand and one paths that lead to and from its centre.

We make graphite pencils, and the world of literature and art opens with its infinite attractions. This field is picturesque and entrancing to the most sluggish imagination.

We make graphite electrical tools. The telephone won't transmit, the electric light won't burn without us. The miracles of the past fade into childish stories before the successes of to-day with the electric fluid, and we who work in graphite look on with content—with supreme delight.

We make graphite lubricants. We lighten the load of the world, time and power are saved, space is overcome, the wheels go around faster, because of us of the graphite world. We are proud of our calling. No preacher, no writer even, has our vantage ground, and we are only at the beginning of the wonders of graphite. W

KNOWLEDGE VS. MORE KNOWLEDGE.

A caller at the office to-day was speaking of a certain mechanical engineer and remarked that what he knew about mechanical engineering would fill a very small book, and what he didn't know a very large volume. Ain't this so with the best of us? The man "who knows it all" is a very sad type. How little of the learning of to-day survives and becomes the mental furniture of the future. Go back thirty years and you find the world without the telephone, without the electric light. What fields of temporary day by day knowledge these radical discoveries have swept away, and how little the mechanical engineer of to-day would know and what a poor figure he would cut were he only equipped with the knowledge current thirty years ago. The world has only begun to open the book of mechanical science and engineering. We are not yet out of the preface or introduction to the infinite volume. The future will see all of our dwellings cooled in summer as we now warm them in winter. Man will yet govern the weather and have it under his command. The average mental power of the masses has increased indefinitely during our century, and is to increase in the future in a more marked ratio. What we know about anything is very small and the future is big with promise. W

SOFT, SMOOTH, VELVETY.

These "American Graphite" leads are strong, tough, will not break in use, and in addition have the very finest touch. They touch the paper with the feeling of rich velvet. This delicious softness and smoothness will arrest your attention at once. W

Productions of the Dixon Crucible Co.

Dixon's Black-Lead Crucibles and Retorts.

All sizes and for all purposes. Bowls, Dippers, Stirrers, Stoppers, Nozzles, Muffles, Sleeves, Etc.

Dixon's Brazing Crucibles.

Made in several shapes for dip-brazing.

Dixon's Graphite Boxes and Covers.

For baking carbons and filaments for electric lighting.

Dixon's Fine Office and Drawing Pencils.

Unequalled for smooth, tough leads and uniformity of grading.

Dixon's Colored Crayons.

In wood or solid. For schools, railroads, editors or factory.

Dixon's Lumber Leads.

Black or colors; for green or dry lumber.

Dixon's Felt Erasive Rubber.

For erasing pencil marks, type-writer work, or ink.

Dixon's Carburet of Iron Stove Polish.

The old reliable; in cake or bulk form.

Dixon's Pure Flake Lubricating Graphite.

A solid lubricant for all frictional surfaces.

Dixon's Special Graphite No. 635.

For lubricating cylinders of gas engines and all close or delicate mechanical parts.

Dixon's Electrotyping Graphite.

Used by the majority of practical electrotypers of this country.

Dixon's Hatter's Lead.

For coloring hat bodies.

Dixon's Plumbago for Shot Polishing.

Dixon's Plumbago for Powder Glazing.

Dixon's Plumbago Foundry Facings.

Dixon's Yacht Plumbago.

For lubricating and smoothing bottoms of yachts.

Dixon's Graphite Waterproof Grease.

For gears, wire ropes, hoisting chains and general machinery.

Dixon's Graphite Axle Grease.

Better and cleaner than castor oil for trucks, wagons, carriages.

Dixon's Graphited Wood Grease.

For use on trolley car gears which are enclosed in a gear case.

Dixon's Graphited Oil.

For use in all places where the use of a grease is impracticable.

Dixon's Graphite Cup Greases

For use in cups or open bearings, on spindles, shafting, etc.

Dixon's Oiled Graphite

Dixon's Lubricating Compound No. 688.

For enclosed gears of electric automobiles.

Dixon's Silica-Graphite Paint.

For metal or wood-work, roofs, bridges, telegraph and trolley poles, smoke-stacks, boiler fronts, and iron construction work.

Dixon's Graphite Pipe-Joint Compound.

For steam, gas and water piping, smearing gaskets and flanges.

Dixon's Cycle Chain Graphites.

For perfectly lubricating chains and gears of bicycles.

Dixon's Graphitoleo

For lubricating bicycle chains, sprockets, pivots and pins; gun locks, and for general use.

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Will glaze the commutator with the finish so much desired by electrical engineers.

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To prevent the spelter from adhering when brazing.

Dixon's Crucible Clay and Graphite Mixture.

For lining and repairing furnaces and fire boxes.

Dixon's Stove Cement.

For repairing stove or range lining.

Dixon's Traction Belt Dressing.

For preserving leather belts and to prevent slipping.

Dixon's Solid Belt Dressing.

Convenient for those who prefer a solid dressing.

Dixon's Graphite Resistance Rods.

From one-eighth to one inch diameter; any resistance required.

Dixon's Graphite Products for Electricians.

Special circulars with detailed information sent on request.

Graphite

VOL. II.

OCTOBER, 1900.

No. 11.

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COPYRIGHTED BY THE JOSEPH DIXON CRUCIBLE CO., JERSEY CITY, N. J.

WHAT YOUR BICYCLE IS.

Your bicycle is simply a machine or engine for converting power into work, and you are the power that drives the engine:

All engines are more or less wasteful of power, be it steam power or human power. Human power can least afford to be wasted.

Friction is desirable or undesirable, according to where it is. You want it between the tire and the ground, but you don't want it in the bearings or the working parts of your wheel.

Remember that all the bearings are inclosed and made as nearly dust-proof as possible, with the single exception of the chain and the sprocket wheels. They are exposed, and therefore require your special and constant care.

All greases and oils, however good as lubricants, catch and hold dirt and grit. Mica, soapstone, talc, and all so-called "white graphites" are comparatively worthless as lubricants.

Dixon's pure flake graphite is acknowledged by engineers and scientific experts to be the best solid lubricant known. It is the ONLY lubricant that should be used for chains and sprockets. It economizes power and saves wear and increases the pleasures of the wheel.

WHY?

Some men thirst while others drink,
Some men talk while others think,

Why are these things so?

Some men smile while others swear,
Some men's heads have brains to spare,
Others' heads run all to hair—

Why are these things so?

Bad men order; good men serve;
Mind grows thin where fattens nerve—

Why are these things so?

Lies ride past in palace cars,
Truth, all marked with bramble-scars,
Staggers on, 'neath evil stars—

Why are these things so?

— *Washington News.*

"WANTED—LOCOMOTIVE ENGINEER."

An advertisement which appeared recently under this heading in a Minneapolis paper, says the *Locomotive*, is so suggestive of past experience and future possibilities that we reproduce it herewith, all but the signature. We can certify to its genuineness, as the original is in our own possession. It reads as follows: "I want a man who can run a Shay Gear Lima engine for logging railroad; I don't want excuses, I want logs. I want a man who can climb into the fire box and caulk his flues with 60 pounds of steam on, and who can 'get there' without having a machine shop under the cab eaves. In short, I want an engineer who will not burn out the telegraph line with complaints to headquarters. Work in Wisconsin. Steady job with adequate pay to the right party."

WHAT HAS BECOME OF THE REAL FABER?

Wilder's *Insurance Magazine* expresses itself thus on a subject of great interest:

"Devoutly hoped for: A Trust that will buy up all the stock of the different companies making Faber pencils, create a monopoly, leave idle all the mills now called Faber that make bogus pencils, raise the price of pencils, and put on the market the Faber No. 2 that has been the favorite of scribblers these many years, but that can no longer be identified in any book shop."

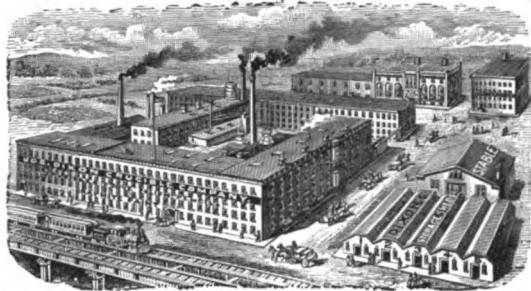
This prayer, in which we would heartily join, is not likely to be answered. Twenty years ago we used the genuine Fabers, and paid ten cents apiece for them, or a dollar a dozen—kept on using them until they seemed to have been wholly displaced by cheap and gritty and utterly abominable imitations. For the last ten years, though often searching, we have been unable to find one of the honest old kind. Substitutes are abundant, and some of them may be called fair to middling in quality, but none comes up to the ancient standard of uniform excellence. Maybe it is because we are getting old, and notions play tricks with us. Realizing the hopelessness of Brother Wilder's petition, we advise him to experiment with Dixon's Metropolitan, No. 2, which, on the whole, we find less unsatisfactory than any other pencil now obtainable.

— *Insurance.*

While we must say it, we will say it as modestly as we can. Previous to 1872 the words Faber and pencil were synonymous. In November of that year Dixon's American Graphite Pencils made their first appearance. The Dixon Company were told that there was no room, even at the top, for another lead pencil, as Faber was not only at the top but had pre-empted and held the entire claim. We were further advised to stick to our stove polish and crucible business and leave the lead pencil business alone. Well, we didn't and now the word Dixon covers a multitude of most desirable lead pencil virtues, and if Brother Davis of *Insurance* will try one of Dixon's pencils stamped "American Graphite," of which several degrees of hardness are made, he will find it even better than the very excellent Dixon Metropolitan.

ESTABLISHED 1827.

INCORPORATED 1868.



JOSEPH DIXON CRUCIBLE CO. JERSEY CITY, N. J., U. S. A.

SALESROOMS AT

68 Reade St., New-York. 1020 Arch St., Philadelphia.
304 Market St., San Francisco. 28 Victoria St., London.

RESIDENT REPRESENTATIVES:

BOSTON. CHICAGO. ST. LOUIS. PITTSBURG.
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GRAPHITE MINES AND MILLS AT TICONDEROGA, N. Y.
CEDAR MILLS AT CRYSTAL RIVER, FLA.

OFFICERS:

E. F. C. YOUNG, JOHN A. WALKER, GEO. E. LONG,
President *Vice Pres. and Treas.* *Secretary.*

JERSEY CITY, N. J., October 1900.

A NEW USE FOR GRAPHITE.

A new six-inch projectile for naval guns has been made which will penetrate fourteen inches of Krupp or any other steel armor, and consequently the sides of nine out of ten of the world's battle ships.

The shell in appearance can be distinguished from the ordinary projectile only by a cap on its nose. This cap is of soft steel, backed with graphite, which enables the point of the shell proper to strike a cushion made by the soft steel, and then, by the assistance of the graphite as a lubricant, the shell, revolving at an exceedingly high rate, bores its way through the armor plate.

RED LEAD PAINT.

The popular fallacy that red lead is a good preservative of iron and steel has resulted in many brands of this pigment being placed on the market, some genuine and many spurious, but all marketed for the one purpose of separating as many dollars as possible from a too credulous trade.

All of which reminds us of the good old lady who said to her nephew, a poor preacher:

"James, why did you enter the ministry?"

"Because I was called," he answered.

"James," said the old lady anxiously as she looked up from wiping her spectacles, "are you sure it wasn't some other noise you heard?"

With all due respect to our competitors, we would venture to suggest that some of them, who have felt "called" to market a red lead paint, may possibly have heard the wrong noise.

II.

If you have a smoke-stack that looks old and rusty, try a coat of Dixon's Smoke-stack Paint. You should be neat and tidy in your premises as well as in your person.

If you own a building with metal roofs or metal gutters and spouts, protect them with a coat or two of Dixon's Silica-Graphite Paint. It may save you much annoyance this coming winter and prove economical.

If there is anything about your house that sticks, or squeaks, or runs hard, put on some finely powdered graphite. If you haven't it in any other form, use a soft Dixon lead pencil—that's graphite—and a surface rubbed over with the soft lead of a Dixon American Graphite Pencil is fairly well lubricated.

If you have a bicycle or an automobile we should be glad to tell you how you can get more comfort with it and prolong its life by means of Dixon's Graphitoleo.

If you know of a brass founder—recommend Dixon's Plumbago Crucibles. If he doesn't already use them he will thank you; if he does use them he will commend your judgment.

If you want to know more about graphite and its uses, write us.

If it wouldn't be a good idea to send for our catalogue of graphite goods and see what we make. May be we can help you and save you money.



Whether it will pay to put a little of Dixon's Pure Flake Lubricating Graphite into your oil or grease and so secure better lubrication, remembering that Prof. Thurston demonstrated that when 15% by volume of Dixon's Flake Graphite was added to the best lubricating grease, the mixture did six times more work than the same grease did without the Dixon graphite. Furthermore, when the graphite was used there was no cutting or heating of the bearings.

Whether it won't pay you to save money by using Dixon's Graphite Pipe Joint Compound in place of red lead for all gas, water or steam joints. We ourselves use it and know that it is more economical and many times better than red lead.

GRAPHITE ON GASKETS.

A writer in *Power* says: "A rubber gasket is good enough for me with some graphite rubbed on both sides when first put upon a joint. I find the best results are obtainable when I mix in a little cylinder oil—just enough to make it sticky—using water to thin it afterwards—as oil is bad for rubber on joints where there is heat. I have used one on a man-hole plate, removing and replacing it every ten days, which has lasted for two and a half years, and it was as good as ever when it accidentally got broken. Inside the shell, where it comes in contact, you will find it clean and smooth, no scraper or anything being required to clean it."



Productions of the Dixon Crucible Co.

Dixon's Black-Lead Crucibles and Retorts.

All sizes and for all purposes. Bowls, Dippers, Stirrers, Stoppers, Nozzles, Muffies, Sleeves, Etc.

Dixon's Brazing Crucibles.

Made in several shapes for dip-brazing.

Dixon's Graphite Boxes and Covers.

For baking carbons and filaments for electric lighting.

Dixon's Fine Office and Drawing Pencils.

Unequalled for smooth, tough leads and uniformity of grading.

Dixon's Colored Crayons.

In wood or solid. For schools, railroads, editors or factory.

Dixon's Lumber Leads.

Black or colors; for green or dry lumber.

Dixon's Felt Erasive Rubber.

For erasing pencil marks, type-writer work, or ink.

Dixon's Carburet of Iron Stove Polish.

The old reliable; in cake or bulk form.

Dixon's Pure Flake Lubricating Graphite.

A solid lubricant for all frictional surfaces.

Dixon's Special Graphite No. 635.

For lubricating cylinders of gas engines and all close or delicate mechanical parts.

Dixon's Electrotyping Graphite.

Used by the majority of practical electrotypers of this country.

Dixon's Hatter's Lead.

For coloring hat bodies.

Dixon's Plumbago for Shot Polishing.

Dixon's Plumbago for Powder Glazing.

Dixon's Plumbago Foundry Facings.

Dixon's Yacht Plumbago.

For lubricating and smoothing bottoms of yachts.

Dixon's Graphite Waterproof Grease.

For gears, wire ropes, hoisting chains and general machinery.

Dixon's Graphite Axle Grease.

Better and cleaner than castor oil for trucks, wagons, carriages.

Dixon's Graphited Wood Grease.

For use on trolley car gears which are enclosed in a gear case.

Dixon's Graphited Oil.

For use in all places where the use of a grease is impracticable.

Dixon's Graphite Cup Greases

For use in cups or open bearings, on spindles, shafting, etc.

Dixon's Oiled Graphite

Dixon's Lubricating Compound No. 688.

For enclosed gears of electric automobiles.

Dixon's Silica-Graphite Paint.

For metal or wood-work, roofs, bridges, telegraph and trolley poles, smoke-stacks, boiler fronts, and iron construction work.

Dixon's Graphite Pipe-Joint Compound.

For steam, gas and water piping, smearing gaskets and flanges.

Dixon's Cycle Chain Graphites.

For perfectly lubricating chains and gears of bicycles.

Dixon's Graphitoleo

For lubricating bicycle chains, sprockets, pivots and pins; gun locks, and for general use.

Dixon's Commutator Graphite

Will glaze the commutator with the finish so much desired by electrical engineers.

Dixon's Anti-Flux Braze Graphite.

To prevent the spelter from adhering when brazing.

Dixon's Crucible Clay and Graphite Mixture.

For lining and repairing furnaces and fire boxes.

Dixon's Stove Cement.

For repairing stove or range lining.

Dixon's Traction Belt Dressing.

For preserving leather belts and to prevent slipping.

Dixon's Solid Belt Dressing.

Convenient for those who prefer a solid dressing.

Dixon's Graphite Resistance Rods.

From one-eighth to one inch diameter; any resistance required.

Dixon's Graphite Products for Electricians.

Special circulars with detailed information sent on request.

Sometime ago we used the above cut in an advertisement in *The Foundry* as an illustration of a crucible of good average life. The size was that of a No. 70. It was used in making car journal bearings. The percentage of copper in the mixture was large, so that the heat was high. The crucible was used in the shops of the Magnus Metal Company.

The length of life of this crucible was 34 heats. The crucible stood the high heat without developing crack or break. It simply wore out and grew thin as time went along until finally it became a mere shell. This is the way a properly made crucible should wear. Duplicates of this same crucible were used in the shops of the Brady Metal Company and in the shops of Williams & Son, of Jersey City.

After the appearance of our advertisement with this illustration we received a number of very interesting and pleasing letters from parties who have had equally good results, and even better, with the Dixon crucibles. Among them was one from Mess. Pattin Brothers & Co., Marietta, Ohio, and they very kindly sent us a Dixon crucible to show us how it looked after running 42 heats on hard work at high heat.

We also received one from Mr. George Coates, foreman of the brass foundry of the Kansas City, Pittsburg & Gulf Rail Road Company. He wrote as follows: "I saw a cut of a crucible in *The Foundry* that had taken 34 heats. I have a Dixon crucible from which I have taken 45 heats of phosphor bronze. It is a No. 50 crucible and furnace has natural draft. In the last heat I melted 140 lbs. There are no cracks in it. I am afraid to use it again on account of its being thin.

"There is everything in taking care of crucibles and in the manner of using them."

THE BEST LUBRICANT FOR INTERNAL COMBUSTION ENGINES.

The subject of the lubrication of gas engines is a very interesting one among manufacturers and users of such engines. Especially is this so, now that this type of motors is becoming so largely adapted to automobiles.

Even the very best of lubricating oils fail to properly lubricate because of the high heat generated in the engine cylinders at the moment of combustion. The heat is said to vary from 1,200 degrees to 2,000 degrees Fahrenheit, and even at 600 or 800 degrees, oils are charred and become useless as a lubricant. Attention has frequently been called to the objectionable fumes which are frequently dispersed by automobiles. It is contended by some that these objectionable fumes are due to unconsumed gases, while others contend that they are due to the burning of the lubricating oils.

The essential properties for the lubrication of a gas engine are that there must be no decomposition of the oil and no production of any gummy material. It is for this reason that we are strongly advocating the use of Dixon's pure flake lubricating graphite. This material is not affected even at the highest heat produced in a gas engine, and as a lubricant it is absolutely without an equal. The only problem to its successful use is that of how it is best introduced.

IS THIS FAIR BUSINESS PRACTICE?

Sometime ago, one of our salesmen secured from a hardware company an order for a barrel of Lubricating Graphite. The suggestion was made to our salesman that he have sent the hardware company three empty five-pound cans to be used as a window exhibit.

In order that the cans might not be used for some other purpose, and in order to have them kept intact for advertising use, we had the screw caps carefully soldered on so that they could not be removed.

A little later on we received a bill from the hardware company for 60c., and a note saying that when the cans were received the tops were found to be soldered on tightly, and they had been obliged to have the tops unsoldered and new tops made before they could fill them with our graphite, for which they made a charge against us of 60c.

**90 MILES AN HOUR
WITH LESS OIL AND LESS
FRICTION, AND NO TROUBLE
WITH HOT PINS OR CYLINDERS**

**IF YOU USE
DIXON'S
PURE FLAKE GRAPHITE
JOSEPH DIXON CRUCIBLE CO.
JERSEY CITY, N.J.**

The hardware company made a few cents extra profit by this sharp transaction, and we are now wondering if this can be called good business practice, or if it bears out the statement made by some, that these are days of business degeneration.

GRAPHITE AND ITS NAMES.

Mac Culloch's Dictionary of Commerce gives the following names for graphite: **ENGLISH**, blacklead, plumbago, graphite, wad; **DUTCH**, potlost; **FRENCH**, mine de plomb noir, plomb de mine, potelot; **GERMAN**, pottloth, reissbley; **ITALIAN**, miniera di piombo, piombaginne, carezolo; **LATIN**, plumbago; **SPANISH**, piedra mineral de plomo.

Graphite

VOL. II.

NOVEMBER, 1900.

No. 12.

Issued in the interest of Dixon's Graphite Productions, and for the purpose of establishing a better understanding in regard to the different forms of Graphite and their respective uses.

COPYRIGHTED BY THE JOSEPH DIXON CRUCIBLE CO., JERSEY CITY, N. J.

A COLLECTING FAD.

The collecting of lead pencils—yes, this is the latest fad which has been brought to our notice, and it pleases us mightily. There are fads and fads, but this one touches our pocket-books in a strikingly pleasant fashion.

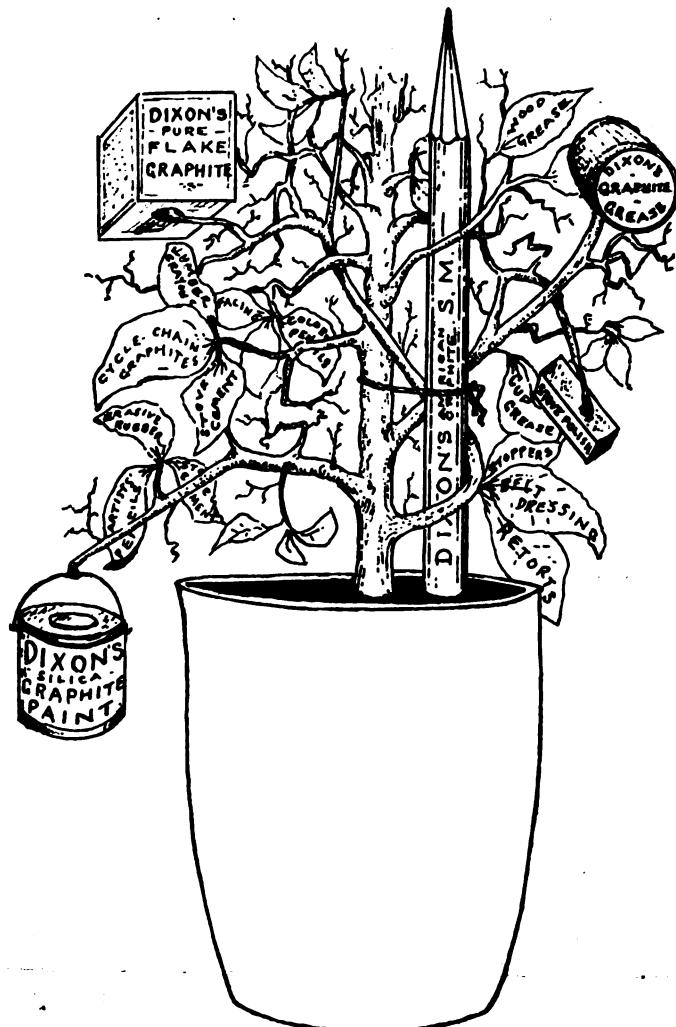
There are so many sorts, styles and varieties of pencils, that a complete collection is only for the "rich and grand." There are pencils with round rubbers (Dixon's Secretary), and square rubbers (Dixon's Continental), and flat ones (Dixon's Cosmos), and hollow rubbers (Dixon's Talisman); thin pencils and thick pencils; big, bulgy ones (Ambassador), hexagon and three-square (Dixon's Trilateral); white ones and black ones; plain ones and mottled; pencils with the American flag on in all its glory, bright with stars and stripes, and others as plain as "pike staffs," and so on *ad infinitum*. But not satisfied with all this variety, our fadish young lady of to-day must have the pencil which her last slave used on the golf links; she must have the pencil your Mister _____ used when he reported the latest bit of society scandal; the one Gen. Wheeler used at Santiago; the one Remington threw away on one of his last sketching trips among the cowboys out west; and then the one treasured above all the rest is that which C. D. Gibson used to outline his first "Typical American Girl."

Long may the fad last and the shadows of its followers ever remain the same, and may their ranks prosper and grow, is our sincere desire and wish.

"COALS TO NEWCASTLE."

Sending coals to Newcastle is a happening quite out of the ordinary, but here our London agent sends us an order for 10 barrels of Graphited Wood Grease for a trolley road away out at the Island of Ceylon.

Nine-tenths of the world's supply of graphite comes from Ceylon. The graphite from which we make our Graphite Wood Gear Grease comes from the Dixon Company's mines at Ticonderoga, N. Y., so after all it is not to be wondered at that we are proud of this little side show to our three-ringed business.



DIXON GRAPHITE PLANT.

Grown in soil from Ticonderoga, Florida and Ceylon, it has flourishing branches in New York, Philadelphia, San Francisco and London. Its productions are found on sale in every civilized portion of the globe.

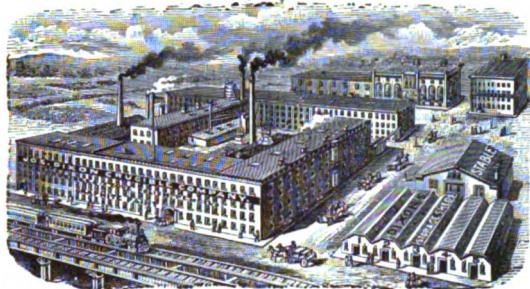
This plant was started over seventy years ago, and now is so large that its parent stem covers fifty-one Jersey City lots, and it is one of the show plants of New Jersey, and the largest of its kind in the world.

Its managers are men of rare ability, and under their watchful care it thrives and flourishes, producing annually carloads and shiploads of perfect fruits, which are not only blessings, but necessities to mankind.

WHAT tells our secrets, yet never knows them? A Dixon pencil.

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President. *Vice Pres. and Treas.* *Secretary.*

JERSEY CITY, N. J., November 1900.

EDITORIALLY.

This issue ends the second volume of "GRAPHITE."

While its publication has for its aim a certain advertising of the productions of the Dixon Company, it has been the endeavor of its editors to present facts and statements in as interesting a manner as possible, and in a form combining readability with instruction.

The subject of Graphite is, to an extent, inexhaustible, and its value to the world of manufacturers, business men and households, cannot be explained in the monthly issue of a paper.

The success and growth of the Dixon Company is undisputed evidence of the public needs, and "the largest concern of its kind in the world" stands for years of experiment, push, careful management and watchfulness in the preparation of the raw material to the perfected state which at this day marks the standard for excellence of the crucible, the pencil, the stove polish, the lubricating flake, oils and greases, the permanent preservative paint, and the list of graphite productions noted in another column of this paper.

"GRAPHITE" has a large mailing list, its terms of subscription being merely a postal request, and there is much interesting information in store for old and new readers during the coming months of issue.

ABOUT THE SIZE OF IT.

Father—"Where is your mother, Johnny?"

Johnny—"She's out in the back yard whittling."

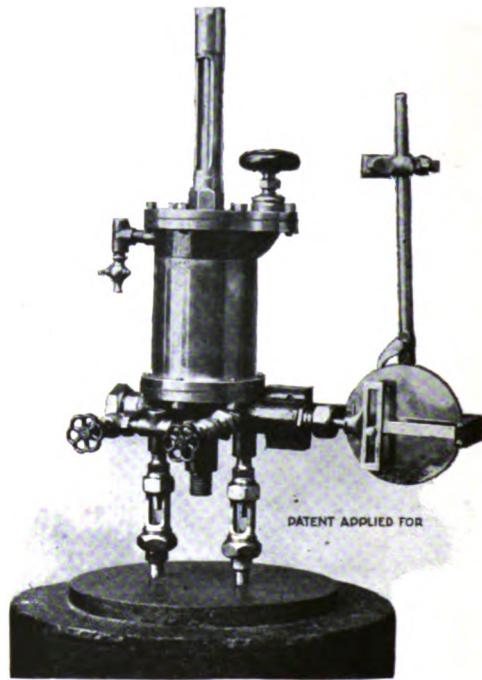
Father—"Are you sure she is whittling?"

Johnny—"Yes, sir; she's trying to sharpen a pencil."

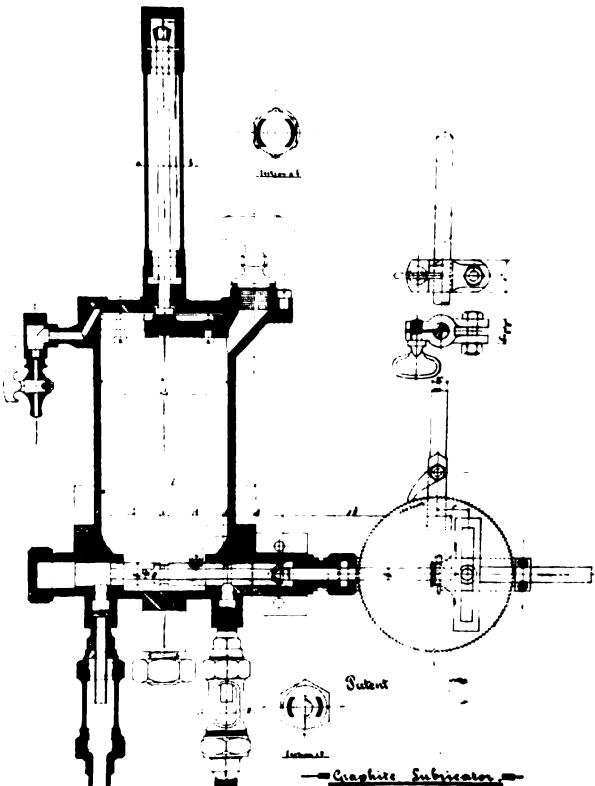
A NEW SIGHT-FEED GRAPHITE LUBRICATOR.

The cuts below represent a "Sight-feed Graphite Lubricator" which feeds Dixon's Pure Flake Graphite automatically, in measured quantities into any steam cylinder. It can be regulated so as to feed any quantity desired.

One of these lubricators has been used in the Pontiac Building, Chicago, for a year and a half and has never once



failed to perform its functions satisfactorily, and has required no attention or repairs. Others have been installed in some of the largest plants in Chicago, where the steam pressure runs up as high as two hundred (200) pounds, and the results were a revelation to the men in charge. The lubricator can be used on all kinds of engines, single, com-



ound or triple expansion. A test was recently made with one of these devices feeding Dixon's Pure Flake Graphite No. 1 into the cylinder of a 1,000 horse-power triple expansion condensing vertical engine. After the first few days the oil was cut off entirely, the graphite doing all the lubricating for the balance of the period. These cylinders (when the heads were taken off) shone like polished mirrors, and all hands were unanimous in the expression that they were in the finest condition of any cylinders they had ever seen.

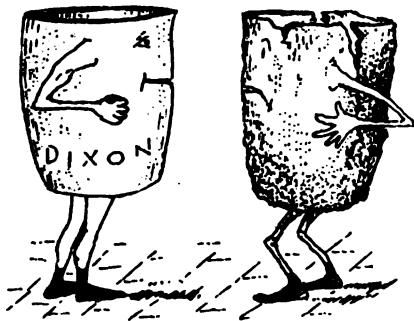
The cups of the lubricator are made to hold from one to five pounds of graphite, but as the majority of them will be made to order, the capacity can be arranged to suit the plant.

This lubricator was patented September 4, 1900, by Fred. Gielow, of Chicago, who is the President of Local Branch No. 1, of Chicago N. A. S. C. For any information in regard to this device we would respectfully refer you to him or to Mr. Charles Burmeister, No. 303 Larabee Street, Chicago, Ill.

THE OLD LADY WHO COULD NOT BE FOOLED.

Miss Elizabeth Alden Curtis, the talented niece of United States Attorney-General Griggs, and one of the latest versifiers of the Rubaiyat, has a penchant for scientific pursuits, and takes great pleasure in mountain-climbing, forest-searching and geologizing.

Last summer while rusticating at Lake George she went walking with a party of friends, chiefly college men and women, and came across some of the beautiful minerals which abound in that district. They picked out a number of specimens which they carried back to the hotel. Here they exhibited their treasure-trove to the other guests, more especially a piece of rose quartz in which were many flakes of plumbago. Miss Curtis, after explaining, left the veranda, giving the quartz to a benevolent-looking, spectacled old lady. She had scarcely departed when the latter, who had been scratching the specimen with her scissors, broke out: "That girl is either fooling us or else she is crazy. Plumbago, indeed! It is nothing but an old stone with some black pencil lead in it."



ON THE CINDER PATH.

DIXON: "Hullo! Othermaker, how did you come out? I saw you were in for a hot time."

OTHERMAKER: "I had hard luck—could not get through my third heat. I am completely used up; lost a lot of metal for my backers."

DIXON: "I had a grand run and came out sound as a dollar. Am good for several more heats. You better go and lie down on some junk heap. I'll take your place."

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All sizes and for all purposes. Bowls, Dippers, Stirrers, Stoppers, Nozzles, Muffles, Sleeves, Etc.

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For use in cups or open bearings, on spindles, shafting, etc.

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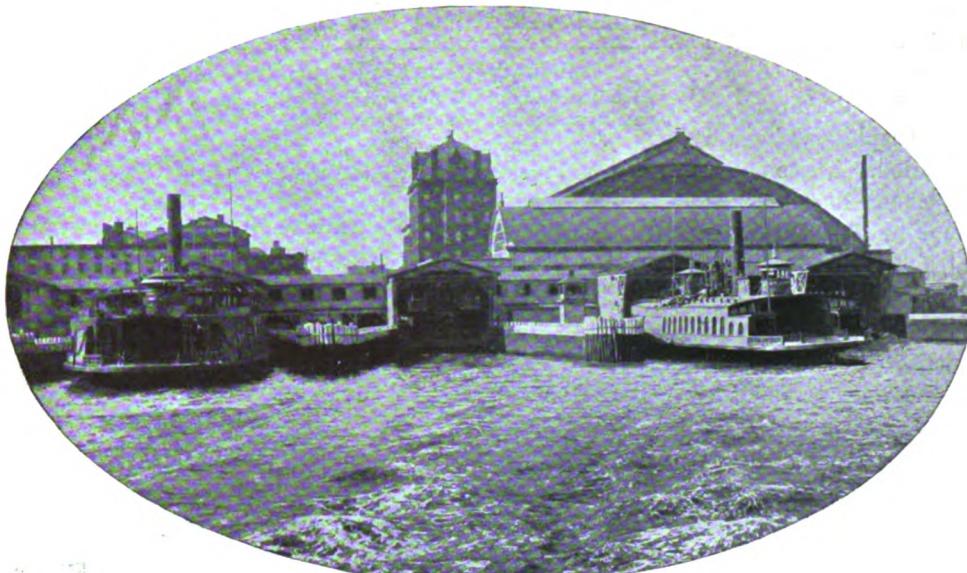
Convenient for those who prefer a solid dressing.

Dixon's Graphite Resistance Rods.

From one-eighth to one inch diameter; any resistance required.

Dixon's Graphite Products for Electricians.

Special circulars with detailed information sent on request.



The above picture shows the train shed, waiting room and ferry sheds of the Pennsylvania Railroad terminal, Jersey City. The waiting room was destroyed by fire, and has been replaced with the largest and most modern waiting room in the world. The dome-like tin roof of the old waiting room had been painted over three years with Dixon's Silica-Graphite Paint, color No. 2, when destroyed. The adjoining ferry sheds are still standing, and the tin roofs have been perfectly protected from corrosion for five years, and have not required re-painting, notwithstanding the great heat from the fire and the rust-producing action of salt air.

This practical demonstration of the great durability of Dixon's Silica-Graphite Paint may be seen from the decks of the ferry boats as they cross the river, by all who are interested in the subject of protective paints. From a distance the paint gives the roof the appearance of slate, and the architectural effect is excellent, as this paint *never fades*, and is in striking contrast to the cheap red metallic or oxide of iron roof paints, which are so commonly used and which fade out within six months or a year and give the building the appearance of being in bad repair.

The durability, and not the price of a roof paint, determines the economy of its use.

Dixon's Silica-Graphite Paint will not taint the water; it is not touched by acids or alkalies; it resists the action of heat longer than metallic or lead paints, and being an elastic coating, it withstands the mechanical action of dust, rain, snow, etc., which so readily destroys the brittle coating of metallic, asphaltum and lead paints.

It is used by large railroads, smelting and manufacturing companies as a standard protective coating for all iron and tin work, and the following letter is proof of our claim that it is the most economical paint on the market.

LOUISVILLE, Kentucky.

JOSEPH DIXON CRUCIBLE COMPANY.

GENTLEMEN:—Your letter of the 24th to hand. Before using Dixon's Silica-Graphite Paint on our elevator, we could not find any paint that would remain thoroughly good for two years. Our building has no gutters on it, and the trouble seemed to be that the dust settling on the water running off the building would form an acid and eat the

paint. The immense volume of water running off the roof and down the sides washed it off. The writer had the main body of the building painted with two coats of graphite, the cupola one coat about seven years ago; it seems to be in good shape yet.

I am very much pleased with its lasting qualities, and propose to use it continually.

Yours truly,

KENTUCKY PUBLIC ELEVATOR CO.

F. C. DICKSON, Manager.

*

We manufacture this paint in but one grade, and will be very glad to give further information as to its covering capacity and durability.

THE AUTOMOBILE EXHIBITION.

The accompanying illustration is that of a souvenir disc eraser which will be presented to visitors at the Dixon booth of the Automobile Show, to be held in the Madison Square Garden, November 3 to 10.

The tag calls attention to "Bishop" Baird, who will be in charge of the Dixon exhibit.

From its wording you will notice that the "Bishop" is a punster. To some people a punster is not attractive, but this "Bishop" possesses characteristics which make him irresistible, for while he has at the end of his tongue a ready flow of language, and is a "glib" talker, he is interested in the Dixon Graphite Products, and is unwearied in explaining their valuable properties.

Visitors will be amply repaid in making his acquaintance, and in the graphitic information they will receive.

The cognomen "Bishop" is one given by his business friends. His diocese is the Borough of Manhattan, The Bronx, Brooklyn, and outlying cities. His polish is not necessarily Dixon's "Carburet of Iron," although he is a master in winning dealers and consumers on the merits of that household necessity.

Every manufacturer or owner of automobiles will be benefitted by a call at Booth No. 1, as graphite lubrication for gas engine cylinders, gears and chains, plays a very important part in the successful manipulation of their vehicles.

A DIXON pencil badly sharpened, is like a good story poorly told. Let your knife be keen and the Dixon pencil will give you the most perfect satisfaction.

Graphite

VOL. III.

DECEMBER, 1900.

No. 1.

Issued in the interest of Dixon's Graphite Productions, and for the purpose of establishing a better understanding in regard to the different forms of Graphite and their respective uses.

COPYRIGHTED BY THE JOSEPH DIXON CRUCIBLE CO., JERSEY CITY, N. J.

OUR PRESIDENT.



E. F. C. YOUNG,
President Joseph Dixon Crucible Company.

We are proud of our president. We are proud of him for so many reasons that we won't attempt to name even one—for if we were to commence there might be no end of them. People who don't know us—and that is saying a great deal—know our president.

Sometimes, in fact very often, a man will say to us: "Let me see, isn't Mr. Young also president of the First National Bank, or of the Griffith Iron Works?" We reply: "Yes, and he is president, vice president, or something or other, of a lot more."

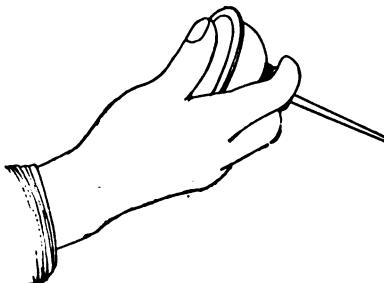
Now, to get matters somewhat in shape, we will mention the leading institutions with which Mr. Young is officially connected, and you would be surprised, if you were to talk with him, how thoroughly posted he is with the business of each of the companies that he is connected with.

EDWARD F. C. YOUNG.

Acker Process Co., Vice President and Director.
American Graphite Co., President and Director.
American Pegamoid Co., Director.
Cleveland Seed Co., President and Director.
Colonial Life Ins. Co. of America, President and Director.
Consolidated Traction Co., President and Director.
First National Bank of Jersey City, Presid't and Director.
Griffith Iron Works, President and Director.
International Banking and Trust Co., Director.
International Steam Pump Co., Director.
Jersey City and Bergen R. R. Co., President and Director.

Joseph Dixon Crucible Co., President and Director.
Kentucky Distilleries and Warehouse Co., Director.
Liberty National Bank, Director.
National Exhibition Co., Director.
Newark Passenger Railway Co., President and Director.
Newark Plank Road Co., President and Director.
N. J. Title Guarantee and Trust Co., Director.
New Jersey Traction Co., President and Director.
New Jersey Land Co., President and Director.
People's Light and Power Co., Director.
Port Richmond and Bergen Point Ferry Co., Director.
Produce Exchange Trust Co., Trustee.
Standard Distilling and Distributing Co., Director.

YOU CAN WITH A CAN.



It is a surprise to many to know that Dixon's Pure Flake Graphite can be used in an ordinary squirt can. It is nevertheless a fact, and a more convenient and efficient way for applying this wonderful lubricant cannot be found. Where the coarser flake is used the opening in the nozzle of the can may require enlarging.

Only a dry can should be used. A can that has had oil in will clog the graphite. Use a dry and new can. It will pay you to try graphite in this way.

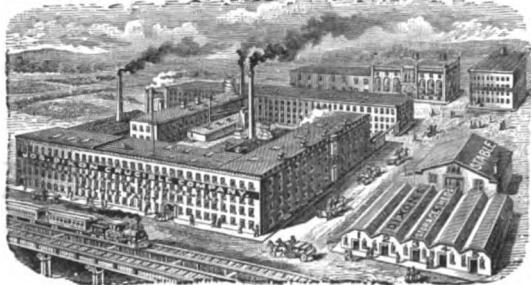
THE MASTERY OF THE OCEAN.

Not merely have the marine architect and engineer found a way to carry a compliment of 2,000 souls across the Atlantic at something like railway speed, under normal conditions of weather, but they have so greatly increased length and beam and depth, and have multiplied boiler and engine power so liberally, that the biggest of our big liners can go smashing its way triumphantly through an Atlantic gale, opposing the momentum of giant seas, with the momentum born of 23,000 tons of displacement backed by 37,000 horse power in the engine room.

—The Scientific American.

ESTABLISHED 1827.

INCORPORATED 1868.



JOSEPH DIXON CRUCIBLE CO. JERSEY CITY, N. J., U. S. A.

SALESROOMS AT

68 Reade St., New-York. 1020 Arch St., Philadelphia.
304 Market St., San Francisco. 28 Victoria St., London.

RESIDENT REPRESENTATIVES:

BOSTON. CHICAGO. ST. LOUIS. PITTSBURG.
PARIS. HAMBURG. VIENNA.

GRAPHITE MINES AND MILLS AT TICONDEROGA, N. Y.
CEDAR MILLS AT CRYSTAL RIVER, FLA.

OFFICERS:

E. F. C. YOUNG, JOHN A. WALKER, GEO. E. LONG,
President. *Vice Pres. and Treas.* *Secretary.*

JERSEY CITY, N. J., December 1900.

EDUCATE YOUR SALESMEN.

The following is from *The Horseless Age*, and we think it well worth the publishing — first because it is true, and second because the day of the old-time and old-fashioned salesman is rapidly drawing to a close. The manufacturer of the present day must employ salesmen who can fully comprehend and thoroughly explain the goods they are selling, even to the smallest detail.

The Horseless Age says: "Inquiries addressed to some of the attendants of the Madison Square Garden Show revealed a lamentable ignorance of the technical details of their machines, the particular advantages of which they were supposed to explain to the public. Many complaints were made on this score by parties seeking information."

Leaving out of consideration, for the moment, automobiles for strictly business purposes, such as delivery wagons and trucks, it is a well-known fact that the majority of automobile buyers take kindly to the new locomotion because they are, what is termed, of a mechanical turn of mind. Such parties are naturally not satisfied with superficial statements, claiming general superiority, which are dealt out in such bewildering profusion by the average salesman, but, as a rule, demand an explanation of the operative principles of every part, in order that they may decide for themselves as to the merits of the machines. The enthusiasm of automobilists of the above description generally grows with their experience, and we have many examples of parties disposing of their vehicles after short use, only to buy types of more recent and improved construction. Buyers having already had experience and knowing the faults of certain details of construction insist even more than the above class of first instance buyers upon learning full technical details

of machines before making their decision. To such the meaningless phrases of the uninformed salesman are disappointing and even irritating and may lead to unwarranted prejudice against a machine of real merit. It is, therefore, of the greatest importance that manufacturers who go to the expense of an exhibit should have representatives in charge who are fully competent to give full and accurate information, not only in regard to constructive details, but also regarding the actual results that may be expected of the vehicle in practice.

In this connection it is proper to commend highly those manufacturers who exhibited details and parts of their machines, with the object of explaining the construction and operation of the machines.

What has been said in regard to the oral information dispensed by the salesmen is also applicable to much of the printed advertising matter distributed at the show. While there were some examples of excellently written catalogues and pamphlets of an instructive nature, the greater part of the literature was calculated to give more information about the rhetorical attainments of certain advertising writers, than of the vehicles it was intended to explain."

WISE WORDS OF SHACABAC.

At the dinner of the Credit Men, held in New York, as reported in *The Sun*, speeches were made by Justice Gaynor of the Supreme Court, the Hon. Theodore Aub, Judge Green of Brooklyn, and Dean Charles Waldo Haskins of the University school of commerce, accounts and finance. Prof. Haskins said in part:

"I have been reading the recovered fragments of wisdom of Shacabac, the Oriental philosopher, and perhaps a few of these gems of thought may be of suggestive use to our study of the credit system of the Western world:

"'We have all,' he says, 'more or less to do with commerce. We buy goods, and sometimes we pay for them. We sell the precious products of our hands or brains at the best price we can get. If the buyer pays up, we are sorry that we did not charge him more. If he fails, we are glad that he did not decide to pay less on the dollar.'

"'Be diligent,' he continues, 'in keeping your accounts. It is better to charge an item twice than to forget to charge it once. This is the true principle of double entry.'

"'Pay as you go,' he says; 'but not if you intend going for good.'

"'In selling goods by sample,' he tells us again, 'let the samples be at least as good as the bulk of the merchandise. Do not put all the best figs on the top of the crate. Have just as good a layer in the bottom also; for there are evil minded persons who open the package at that end.'

"Concerning truth he gives this advice. 'Do not believe all that you hear or see—not even in the newspapers. Advertisers are human and liable to err.'

"'Be not angry with your creditors, if they importune you. It is nobler to forgive and forget them.'

"'Three removes are as bad as a fire; but that,' Shacabac says, 'depends largely on how you stand with the underwriters.'

"Once when this Shacabac had delivered a learned discourse on commerce and finance, a young man asked the sage how he might become rich without too much trouble.

'List to me,' replied the wise man, 'and I will teach thee in six easy consecutive lessons, at one sequin per lesson.' The young man, joyfully complying, paid the money, and sat at the feet of the philosopher. But when the course was over he cried out: 'Bismillah! thou hast taught me naught!' 'Nay,' returned the sage, 'I have taught thee how to make six sequins. Go to, ungrateful one.' And the ungrateful one, we are told, abashed at the reproof, immediately opened a commercial college where every branch of business could be learned 'while you wait.'

GUMPTION.

Gumption, although an old-time word, is nevertheless very expressive. The dictionary tells us it means ready perception and discrimination; quick discernment and the elements of practical success; acuteness; common sense.

It sometimes seems as if these qualities were sadly lacking these days in many of the young men and women beginning commercial life, graduates from business colleges not excepted.

Sometime ago we employed a new stenographer—one with a diploma. We dictated as follows: "A new tin roof that is oily or greasy should be washed with some alkaline solution before paint is applied." It was reproduced by the new stenographer as follows: "A new tin roof that is oiled by grease should be washed with some alcoholic solution."

"Dixon's Silica-Graphite Paint is used where any other first class linseed oil paint is used", came back "Dixon's Silica-Graphite Paint is used where no other first class linseed oil paint is used."

The sentence: "Where they do not want the brass to adhere", was rendered: "Where they do not want the price to adhere". "Graphite ground with silica" came back "Graphite wound in silk". There were several others that we were never able to untangle, and, well we are glad to learn that that stenographer "has a better position". What we want is gumption and not diplomas.

HAPPY BLUNDERERS.

Below are selections from some examination papers—not imaginary, but drawn from the note-book of an American educator and printed in the *Atlantic Monthly*. Rich, unconscious humor may be fully tasted in them.

"What was the religion of the Ancient Britons?"
"A strange and terrible one—that of the Dudes."
"Where is the earth's climate the hottest?"
"Next the creator."
"What causes perspiration?"
"The culinary glands."
"What is the spinal column?"
"Bones running all over the body and very dangerous."
"For what is John Milton famous?"
"Keeping bad angels out of heaven."
"Name some of the early Christian Fathers?"
"Jerome, Oxigen and Ambrosia."
"What is the form of water-drops?"
"Generally the spherical, for reasons known only to the gracious Providence who makes them."

Productions of the Dixon Crucible Co.

Dixon's Black-Lead Crucibles and Retorts.

All sizes and for all purposes. Bowls, Dippers, Stirrers, Stoppers, Nozzles, Muffles, Sleeves, Etc.

Dixon's Brazing Crucibles.

Made in several shapes for dip-brazing.

Dixon's Graphite Boxes and Covers.

For baking carbons and filaments for electric lighting.

Dixon's Fine Office and Drawing Pencils.

Unequaled for smooth, tough leads and uniformity of grading.

Dixon's Colored Crayons.

In wood or solid. For schools, railroads, editors or factory.

Dixon's Lumber Leads.

Black or colors; for green or dry lumber.

Dixon's Felt Erasive Rubber.

For erasing pencil marks, type-writer work, or ink.

Dixon's Carburet of Iron Stove Polish.

The old reliable; in cake or bulk form.

Dixon's Pure Flake Lubricating Graphite.

A solid lubricant for all frictional surfaces.

Dixon's Special Graphite No. 635.

For lubricating cylinders of gas engines and all close or delicate mechanical parts.

Dixon's Electrotyping Graphite.

Used by the majority of practical electrotypers of this country.

Dixon's Hatter's Lead.

For coloring hat bodies.

Dixon's Plumbago for Shot Polishing.

Dixon's Plumbago for Powder Glazing.

Dixon's Plumbago Foundry Facings.

Dixon's Yacht Plumbago.

For lubricating and smoothing bottoms of yachts.

Dixon's Graphite Waterproof Grease.

For gears, wire ropes, hoisting chains and general machinery.

Dixon's Graphite Axe Grease.

Better and cleaner than castor oil for trucks, wagons, carriages.

Dixon's Graphited Wood Grease.

For use on trolley car gears which are enclosed in a gear case.

Dixon's Graphited Oil.

For use in all places where the use of a grease is impracticable.

Dixon's Graphite Cup Greases

For use in cups or open bearings, on spindles, shafting, etc.

Dixon's Oiled Graphite

Dixon's Lubricating Compound No. 688.

For enclosed gears of electric automobiles.

Dixon's Silica-Graphite Paint.

For metal or wood-work, roofs, bridges, telegraph and trolley poles, smoke-stacks, boiler fronts, and iron construction work.

Dixon's Graphite Pipe-Joint Compound.

For steam, gas and water piping, smearing gaskets and flanges.

Dixon's Cycle Chain Graphites.

For perfectly lubricating chains and gears of bicycles.

Dixon's Graphitoleo

For lubricating bicycle chains, sprockets, pivots and pins; gun locks, and for general use.

Dixon's Commutator Graphite

Will glaze the commutator with the finish so much desired by electrical engineers.

Dixon's Anti-Flux Brazing Graphite.

To prevent the spelter from adhering when brazing.

Dixon's Crucible Clay and Graphite Mixture.

For lining and repairing furnaces and fire boxes.

Dixon's Stove Cement.

For repairing stove or range lining.

Dixon's Traction Belt Dressing.

For preserving leather belts and to prevent slipping.

Dixon's Solid Belt Dressing.

Convenient for those who prefer a solid dressing.

Dixon's Graphite Resistance Rods.

From one-eighth to one inch diameter; any resistance required.

Dixon's Graphite Products for Electricians.

Special circulars with detailed information sent on request.

BENEFITS OF THE MOON.

The moon ministers to human wants in several ways that are not so apparent as its light-giving function, although some of them are much more important. It is by observing the position of the moon with reference to the fixed stars that the navigator determines his longitude. Upon the revolution of the moon around the earth is based a convenient division of time—the month—intermediate between that furnished by the earth's daily rotation and its revolution through its orbit. Doubtful points in ancient chronology have been frequently settled by means of eclipses of the moon, the dates of which could be accurately determined. The intervention of the moon in eclipsing the sun gave astronomers the opportunities for obtaining their first knowledge in regard to the solar envelope. But the largest effects on human welfare are produced by the moon through the agency of the tides. Twice a day the decomposing organic matter brought down to the seashore by rivers, or deposited along the water's edge by human agency, is swept away by the tidal wave in its course around the globe. This sanitary service which the moon performs is of inconceivable value. In many harbors, large ships and heavily loaded rafts and barges are moved from the entrance to their wharves, miles above, by that slow but powerful tug, the flood tide. An amount of work is thus done, which, if it had to be provided by artificial means, would cost for such a port as London thousands, perhaps millions, of pounds yearly.—*Popular Science News*.

THE PENCIL'S TROUBLES.

The pencil heaved a weary sigh
And murmured to the pen:
“I haven't felt so out of sorts
Since—oh, I don't know when!
“The penknife treats me very ill;
It cuts me in the street,
And really is extremely sharp
When'er we chance to meet.
“And when I broke the other day
Beneath its bitter stroke,
It said it didn't see the point;
Neither did I the joke!
“With many troubles I'm depressed,
My heart feels just like lead.”
The pen mopped up an inky tear,
“I weep for you,” it said.

—*Boston Herald*.

By courtesy of Jos. M. WADE, publisher *Fibre and Fabric*.

HOW HE DID IT.

Mr. G. J. Ortner, of the Pueblo Brass and Iron Foundry, Pueblo, Colo., said that he had no difficulty in getting from fifty to sixty heats out of Dixon's Crucibles. We were a little curious to know how he did it, and this is what he says:

“I received your letter of the 10th inst. In reply to it will explain how I got from fifty to sixty heats out of your crucibles. I first am very careful in annealing the crucibles

and am very careful with good tongs not to squeeze them, and after pouring I take my skimmer and scrape all dross out of the inside of the crucible with good care, and handling with care I get these good results. I have tried other makes of crucibles but could not get as good results as with Dixon's”

WHAT LUBRICATION WILL DO.

We have an eight-day clock, marine movement, on our desk. Lately it would run only three or four days, and lose time at that. We put a few drops of oil on the bearings and the clock not only run for the full time but gained ten minutes a week.

There is more power lost by friction and want of proper lubrication than we have any idea of. Oil and greases are good lubricants, probably we couldn't do without them, but they are made twice as valuable by the addition of 5% or 10% of Dixon's pure flake graphite, which is the best solid lubricant known to science or practise.

A PARAPHRASED PROPHESY.

I do not know, I cannot tell,
What's in the years to come;
But in the shadow of a spell,
That's passing over me,
I hear a far-off voice that sings
A song of hope, a voice that brings
A graphite prophecy :

“The world, “it says,” is running about right
When it lubricates with Dixon's Flake Graphite.”

“If I were to give you an orange,” said Judge Foote of Topeka, “I would simple say, ‘I give you the orange,’ but should the transaction be intrusted to a lawyer to put into writing he would adopt this form: ‘I hereby give, grant and convey to you all my interest, right, title and advantage of and in said orange, together with its rind, skin, juice, pulp and pits; and all rights and advantage therein, with full power to bite, suck, or otherwise eat the same, or give away with or without the rind, skin, juice, pulp or pits; anything hereinbefore or in any other deed or deeds, instruments of any nature or kind whatsoever to the contrary in any wise notwithstanding.’”—*Boston Transcript*.

YUM! YUM!

One of our friends, on receipt of some Dixon pencils, effervesces as follows:

“The pencils have gum,
Yum!
Yum!
And I thank you, by gum,
By gun!
Whenever I chose one,
Whenever I use one,
From out that lovely lot,
I shall think of you,
Very kindly, too,
So, you see, you'll not be forgot.”

Graphite

VOL. III.

JANUARY, 1901.

No. 2.

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COPYRIGHTED BY THE JOSEPH DIXON CRUCIBLE CO., JERSEY CITY, N. J.

"THE STAR OF HOPE."

The Fourth Estate, in commenting on *The Star of Hope*, a paper published bi-weekly by the inmates of Sing Sing prison, says that it is a continual surprise to those who have an opportunity of examining the several issues as they appear. Typographically the publication is an attractive one, as it is printed on good, heavy paper, in a clear faced type, and the press-work is surprisingly well done.

A perusal of the contents of this paper shows that there is behind the bars of the penal institutions of the State a considerable amount of literary ability of a high order of merit.

The editor himself, whose identity is hidden behind his prison number, 1500, is a man of education, experienced in newspaper work, a philosopher, and a brilliant paragraphist, as shown by the following examples of his work in a recent number published under the general head of "Lucid Intervals."

Some men are like dice—easy to rattle but hard to shake.

The toper swears off occasionally, but the spring poet—never.

Money talks, but it never remains with us long enough to become a bore.

The most bitter medicine is often the best. It is the same with experience.

Poets take in the beauties of nature. Their wives usually take in washing.

We save money for a rainy day and on the first day of sunshine we spend it.

A man may 'smile' and 'smile', but if he doesn't quit in time he will see snakes.

There are friends who will stand by you till the last dollar. Your dollar, not theirs.

The difference between a saint and a sinner is, the sinner is found out, and the saint is not.

Court costs are fully understood by the man who has been the defendant in a breach-of-promise suit.

We, as prisoners, need no spectacles to see the beauty of uprightness when we look through our barred doors.

The world may owe every man a living, but the majority of them are too lazy to hustle around and collect it.

A polite man is one who listens with interest to things he knows all about, when they are told him by a person who knows nothing about them.

A new publication is named "What to Eat." It should be supplemented by another entitled "How to Get It."

There are two places in a newspaper where a man is superstitious about having his name appear,—the obituary column and the police-court record.

Beware of the man who smiles when he is glad; he is probably a humorist.

Here are samples of the advertisements which are printed each week:

ADVERTISEMENTS.

WANTED—Good dancers to attend the codfish balls, given every Friday at the State Sanitarium for Retired Bankers, Auburn, N. Y.

WANTED—at once, 2 1-2 yards of steak, smothered in onions, with fried potatoes and a few tomatoes. Address 316, S. S. P.

WANTED—Would some prison philanthropist kindly furnish an old 'dub' with a new corn-cob pipe and oblige 317, S. S. P.

LOST—A memorandum book, filled with quotations and a Tompkin's pocket dictionary. The finder will be awarded by returning to cell 604.

What do the prison inmates find to write about, shut in as they are away from the great throbbing world outside?

The issue of October 7 contains a capital original tale entitled "A Diabolical Story", an article on "Penology", "Good Books and Their Influences", "Recollections of An Old Stager", "As to Good Resolutions", "How the Star of Hope is Made", "Christian Work in Prison", "Flash Lights", "Thoughts for Thoughtful Men in Prison and Out", "The Open Parliament", a dozen poems, humorous paragraphs, etc.

It will be seen from the above that the articles cover quite a range of thought. The several issues of the *Star of Hope* that have been received by *The Fourth Estate* have been read with a great deal of interest. The tone of all has been commendably high. Although the writers have been adjudged law breakers, they are not pessimistic, but hopeful. They look forward to better things and make the best of their lot.

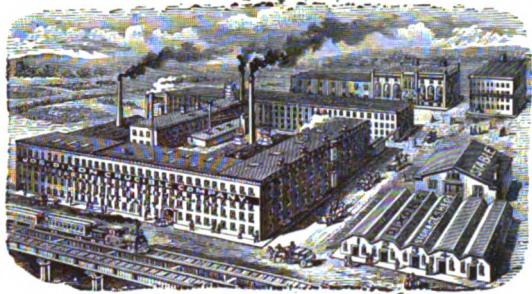
If the state wanted to make money it could do so by placing the *Star of Hope* on sale at the newsstands. There are lots of people who would buy it every week.

DIFFERENCES IN LEAD PENCILS.

There is just as much difference in lead pencils as in the staff of life itself. Some are bad enough to make us dyspeptic or pessimistic; others are worse and bad enough to make us swear or hire a man to do it for us. People who are fretted and annoyed with brittle leads, and unevenly graded lead pencils, should use Dixon's "American Graphite." Where these pencils are used there will be fewer cases of nervous prostration.

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JERSEY CITY, N. J., January 1901.

WHERE THE NEW CENTURY WILL REALLY BEGIN.

There is a good deal of sentimental interest attaching to the opening of a new century. Which land will see it first? Whose eye will be the first to note its advent? Whose hail will usher in its earliest moment? Like so many of the phenomena, such as the eclipse and the transit of the planets, the incoming of the twentieth century will be in a region so sparsely settled as to be almost devoid of human life.

The first moment of the twentieth century, the first second of January 1, 1901, will occur in the midst of the Pacific Ocean, along a line conforming in general to the meridian of one hundred and eighty degrees east and west longitude from Greenwich. There is here no land of consequence to salute the new century; no human eye, save, perchance, that of the watch on board some tiny ship, will be there to see its entrance, and its only welcome will be, perhaps, the last strokes of the eight bells marking midnight on board some steamship or vessel which, by chance, may cross the meridian at that instant.

The first people to live in the twentieth century will be the Friendly Islanders, for the date-line, as it may be called, lies in the Pacific Ocean, just to the east of the group. At that time, although it will be already Tuesday to them, all the rest of the world will be enjoying some phase of Monday, the last day of the nineteenth century. At Melbourne the people will be going to bed, for it will be nearly ten o'clock; at Manila it will be two hours earlier in the evening; at Calcutta the English residents will be sitting at their Monday afternoon dinner, for it will be about six o'clock; and in London, "Big Ben", in the tower of the House of Commons, will be striking the hour of noon. In Boston,

New York and Washington half the people will be eating breakfast on Monday morning, while Chicago will be barely conscious of the dawn. At the same moment San Francisco will be in the deepest sleep of what is popularly called Sunday night, though really the early, dark hours of Monday morning, and half the Pacific will be wrapped in the darkness of the same morning hours, which become earlier to the west, until at Midway or Brooks Islands it will be but a few minutes past midnight of Sunday night.

Of course, everybody knows that the twentieth century will begin on Tuesday, January 1, 1901. It is true that some thoughtless individuals have obscured the matter by hasty expressions of opinion, setting the date for January 1, 1900. But such persons have forgotten that we begin to count with 1, and that the hundred is not completed till the two ciphers have appeared, and then the new hundred begins as did the old one, with 1. Just as the year 100 with its close marked the completion of the first century, so will the year 1900 with its last moments end our nineteenth century, and 1901 begin the twentieth.

The above extract is from a neat 16-page pamphlet, published by the Dixon Company for distribution. A copy of which will be mailed on request.

GRAPHITE AND THE TWENTIETH CENTURY.

With the twentieth century, we find the graphite industry fully fledged and recognized the world over as one of the most important factors in all of the busy departments of civilized life. It has only been during the last quarter of the nineteenth century that the graphite business has made pronounced and apparent progress. It is true that even fifty years ago the making of lead pencils had progressed with a fair degree of success, but even twenty-five years ago the lead pencil was far from its present degree of smoothness, toughness and reliability.

The various crucible manufacturers which have branched off from the parent stem or sprung up of their own accord have found it difficult to keep pace with the requirements of the smelting trade. The utilization of scrap metals and the various fluxes to hasten melting have severely tested even the very best makes of crucibles; but it may be said with truth that the Dixon crucible of the present day is far in advance of its predecessor. In addition to the old-time style of crucible there are made now crucibles of all sizes and dimensions, crucibles for coke-fires, coal-fires, oil-fires and gas-fires. There are many special devices for special purposes to which we can only refer in our catalogues.

The demand for better lubrication has brought into prominent view the wonderful records made by machines lubricated with the now famous Ticonderoga Flake Graphite. Without doubt the early years of the twentieth century will witness rapid advances in graphite lubrication.

In the way of protective paints, there is a strong leaning from all quarters toward carbon paints, and of the various forms of carbon, none has proved so durable and so thoroughly protective as a finely divided flake graphite. Wonderful records are on file concerning the durability of Dixon's Silica-Graphite Paint as a protective coating for surfaces exposed to the ravages of storms, acid and alkali fumes. It is being more largely used than ever as a protective

coating for the internal iron construction work of large buildings.

With the steady growth of fine printing and beautiful illustrations comes an increased demand for Electrotyping Graphite, a graphite most finely divided and of the greatest possible purity.

In the electrical field there is a growing demand for graphite in the form of resistance, as well as in form of a lubricant for arc-lamps, controller contacts, switches, etc., where it is not possible to use oil on account of its inability to withstand sudden and great changes of temperature, and because of its liability to gum.

For many years graphite has been used for smoothing molds and for facings in the casting shop; now, as we are growing more particular in our demands for fine work, graphite facings more than ever are in demand by those who wish to produce perfect castings.

With the coming of the automobile, especially the automobile with the internal combustion engine, graphite finds new uses in the way of a lubricant for engine cylinders, both of the gas type and steam automobile, also for the various gear wheels, chains, etc.

Graphite is used not only as a lubricant for all metal surfaces but also for all wooden surfaces, and for this reason the manufacturer of piano actions finds it indispensable.

Graphite is used not only alone but combined in various ways. It is used largely for making smooth the bottoms of racing yachts, thereby enabling the yacht to make, frequently, sufficiently better time to win the prize. Graphite compounded with other ingredients forms one of the best possible dressings for commutators of electric motors and generators. It is used as a core-wash in molding shops and as a coloring pigment in the manufacture of hats. Compounded with choice greases it is manufactured into cup-grease for expensive machinery and the cheaper forms of graphite mixed with common greases are used for lubricating the curves of trolley roads.

The trolley companies are also indebted to the use of graphite in the form of Graphited Wood Grease, which when used on the motive gears of trolley cars prevents the grinding noise of worn gears.

Graphite is an indispensable article and daily growing more so on the huge locomotives that rush across the country at speeds of sixty miles an hour. It is graphite that gives the glossy black sheen to the front ends of locomotives and to the locomotive stacks, and protects those surfaces from rust and dirt. It is graphite fed into the cylinders of these great engines and to the various pins and bearings which permits the engineer to keep on his way without the old-time delays from hot boxes and hot pins which were so frequent when oil alone was used.

Graphite forms a prominent part of the lubricants used for preserving the wire cables used in elevators, quarries, mines, etc.

With the advent of each year, new uses seem to be found for graphite. Already the Dixon Crucible Company and its famous Dixon Graphite are known in every civilized part of the world. With its great plant and general offices located in Jersey City, it reaches out with branches in New York, Philadelphia, Chicago, San Francisco and Lon-

don and with agencies in all of the prominent cities of Europe. Travelers from the Dixon Company canvass the entire civilized world, and those who have witnessed the growth of the Dixon Company seem safe in predicting that before the first quarter of the twentieth century shall have passed away, the Dixon Company with its graphite industry will be one of the very largest concerns in the world, ranking with the great electrical, iron and oil industries.

LUCK OF A TINSMITH.

The *New York Sun* is responsible for the following tale: As an illustration of the eternal fitness of things, this story was told last week by a well-known lawyer who lives in Harlem and knows the tinsmith whose experience he related. The tinsmith was covering the roof of a Greenwich Street building on the morning of the day when the Tarrant drug store blew up. The job was nearly complete, and to his disgust he found that he had underestimated the amount of tin needed by one small square. His shop was in Harlem.

He had put on all of the tin plates, leaving bare a spot the size of one plate, at noon, and he came off the roof and went to a restaurant for luncheon. He was debating whether he should ride clear up to 125th Street for this one piece of tin or attempt to buy it down-town when the series of explosions in the Tarrant drug house occurred.

The tinsmith was in the first crowd that gathered about the ruins, and when he had satisfied his curiosity he thought that he would take just a look at the roof on the Greenwich Street building to see if it had been injured. When he reached the roof he found it uninjured, and near the spot which he had been forced to leave bare because he was short one piece of tin lay a strip of tin. It was slightly bent and it had evidently been used on one of the buildings which had been blown up. It was tin of the same size as that he had been using and its flight in the air had not damaged it, as it was painted with what the tinsmith believed was Dixon's Silica-Graphite Paint. The tinsmith promptly completed his roof with it. He thus far resisted the suggestion of his friends that he tempt his luck further and play policy.

A PROGRESSIVE CENTURY.

The daily papers and magazines will probably contain copious references to the achievements of smart people during the nineteenth century, so it will be quite proper that we use a small part of our valuable space in enumerating some of the inventions and discoveries which have been particularly helpful to mankind.

Without regard to the order of their dates we refer to the following:

Telegraph, Bessemer Steel, Roller Flour Mill, Pasteur's Discovery, Typewriter, Phonograph, Bicycle, Sewing Machine, Telephone, Power Printing Press, Photography, Typesetting Machinery, Agricultural Machinery, Railway, Steam Navigation, Electric Lighting, Electric Power, Anaesthetics, Antiseptics, Sub-marine Cable, Artificial Ice, Wireless Telegraphy, Photo-engraving, Roentgen Rays, Air Brake, Vulcanized Rubber, Dixon's Black Lead Crucibles, Lead Pencils, and Graphite Specialties.

THE GRAPHITE INDUSTRY.



JOSEPH DIXON.

The story of graphite begins away back beyond the Dark Ages. If it could be fully told it would be fascinating and marvellous beyond anything that the fossil remains of ancient organic life have as yet fed our imagination with.

The geologists have made us familiar with the wonderfully preserved specimens of plants, animals and shells of the coal meas-

ures, on which human eyes probably never looked until they were laid bare by the miner's pick and shovel, but the earliest history of graphite and its associations must remain a blank.

Graphite is a form of carbon, the substance which constitutes so large a portion of organized nature, more especially of the vegetable world. Graphite is said to be the most highly crystallized form of carbon next to the peerless diamond.

Undoubtedly graphite is closely allied to coal, although older in origin, and the subject of more intense and long-continued metamorphic influence.

So far as yet known Ceylon holds the largest and richest deposits of graphite, and the world is indebted to Ceylon for its largest supply. The next best source of supply are the now equally famous Ticonderoga mines of the Joseph Dixon Crucible Company.

We will pass over the earlier history of graphite, wherein it did not constitute an industry, but was recommended and used for various diseases, and in a crude way as marking pencils, etc., and come to where it was made of more practical and larger use.

In a paper read before the Ceylon branch of the Royal Asiatic Society we are told "that the export of Ceylon graphite must have commenced between 1820 and 1830, as Mr. Joseph Dixon, the founder of the great American Crucible Company, obtained a shipment of Ceylon plumbago in 1829."

Turning to our own records, we find that Joseph Dixon, the founder of the Joseph Dixon Crucible Company, in the year 1827 made crucibles by using the plumbago found in the state of New Hampshire. The quality was so far superior to the Dutch blacklead pots, that the melting-pot business was completely revolutionized, and the Dixon graphite (frequently called plumbago or blacklead) crucibles became the standard. Mr. Dixon afterward saw specimens of graphite that had been brought from Ceylon as curiosities by captains in the East-India trade; and, finding them so much better than the New Hampshire plumbago, he procured a shipment, which was the first importation of Ceylon graphite into the United States.

The graphite industry, therefore, really begins with the

founder of the Dixon Company. He it was whose fertile brain conceived the possibilities of graphite, and he it was whose skilled hand first gave to the world graphite crucibles and the celebrated "Carburet of Iron" stove polish, which has brightened the stoves of three generations. A picture of Joseph Dixon, showing his strong, intelligent face, appeared in *Graphite* for February, 1899, and we thought it might appropriately head this article.

AMERICAN ENTERPRISE IN EUROPE.

Mr. John A. Walker, vice-president of the Joseph Dixon Crucible Company, Jersey City, has lately returned from one of his periodical trips to Europe. His impressions and observations are recorded in the following:

One thing very sharply felt now is a very vivid impression of the military and commercial importance of the United States. Since the Spanish war they have a changed opinion of American military prowess, and with our stores of ready cash and our disposition to not shrink from a just conflict, a wholesome respect for our latent gallant military strength is observed. One meets this expression of opinion in Berlin, in Vienna, in Paris, also in London. The official figures of the United States census recently given out were republished next day in all European papers, with such comments as showed that they recognized us as a young athletic giant, with incalculable strength.

It goes now as a household word everywhere in Europe that America is fabulously rich. They know of the unprecedented business of the past two years, our phenomenal exports, their high prices, and speak invariably of America as a country where countless sums have been made in recent years, and where the commercial strides have been greater during this time than elsewhere on the globe.

American machines, American tools are everywhere in demand. American goods are on the shelves and American manufactures are being pushed everywhere by ubiquitous agents. In one store in Brussels I saw the sign in the show window, "Here is United States spoken." On my steamer going over was the president of a notable American sewing machine company, going to plan for a factory in Germany.

Everywhere in Great Britain is expressed the thought that now, as never before, is the old-time British commercial supremacy assailed. It is dawning on them that they have slept too soundly in stolid conservatism, inattentive to the changed spirit of the age, while both Germany and America have slowly gained seriously on them, and on all sides you hear the warning cry: "Awake before it is too late!"

Lord Roseberry gave his rectorial address to the students of Glasgow University in November and put this thought in sharp words. It was called by one paper "an attempt to arouse the nation from its snug self-complacency;" another said these questions of Lord Roseberry were being asked by all thoughtful men; another said: "Are the phlegmatic Teuton and the 'cute New World scion of the Anglo-Saxon race to outstrip us?" Lord Roseberry clearly diagnosed the trouble and gave his views of the arduous task before the nation, if they "would prove that the business virility of the English people is not a spent force."

—*Iron Age*.

Graphite

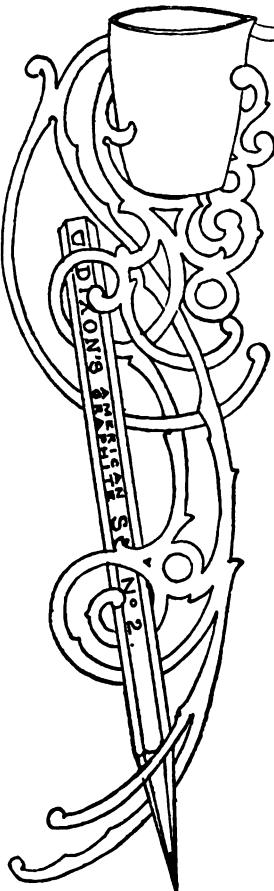
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No. 3.

Issued in the interest of Dixon's Graphite Productions, and for the purpose of establishing a better understanding in regard to the different forms of Graphite and their respective uses.

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A BIT OF INFORMATION THAT USERS OF GRAPHITE SHOULD POSSESS.

To the vast majority the word salt means only common table salt, but to a chemist the word salt means what results from the chemical combination of a metal with an acid. Table salt results from the union of a gas called chlorine with a metal called sodium.

In the same manner to the vast majority of people the word graphite or plumbago suggests ordinary stove polish, as that is the form most generally known. To the trained chemist, however, the word graphite means one of the forms of carbon. Furthermore, the chemist knows that the words plumbago and blacklead, while misnomers, are synonyms for the word graphite, but that graphite differs widely in its characteristics and its usefulness.

Probably the Dixon Company, who are miners and importers of graphite as well as manufacturers, have a wider experience in and a fuller knowledge of graphite than can be found elsewhere. This experience and knowledge causes the Dixon Company to select one kind of graphite for its lead-pencils, another kind for its lubricants, and to make various selections and mixtures of graphite for the different graphite products sent out by the Dixon Company.

The intent of this article is to bring out the fact that graphite differs widely in appearance and in its physical make-up. Some is crystalized and some is amorphous, some is hard and some is soft, and there are many other differences. The best results can only come when the proper graphite is selected, and then properly prepared.

CASEY'S CASE.

Law News is responsible for the following illustration of the convenient elasticity of a technicality in the right hands:

A Canadian gentleman, named Casey, was appointed to a government place which technically had to be occupied by a lawyer, which Mr. Casey was not. The benchers of the Law Society, however, undertook to obviate the technicality, and appointed one of their number to examine him as to his knowledge of the law.

"Well, Casey," said the examiner, "what do you know about the law, anyway?"

"Well, to tell the truth," said Casey, modestly, "I don't know a single thing."

"I have examined Mr. Casey as to his knowledge of the law," the examiner stated in his affidavit, "and to the best of my knowledge and belief he answered all the questions entirely correctly."—*Youth's Companion*.

MIGHTY HAPPY.

Oh, we're feelin' mighty happy
As along the road we jog,
For the fat is on the 'possum
And the bark is on the dog.

And life is not a riddle,
But happiness complete,
For the bow is on the fiddle
And the move is on the feet!

Then sing the joy of living
And go it with a whoop!
For the cash is on the counter
And the oysters in the soup.

—*Atlanta Constitution*.

GRAPHITE AS A LUBRICANT.

There is now no question as to the usefulness of graphite as a lubricant.

Nor is there any longer any question as to which kind of graphite should be used for the best results.

It has been demonstrated in every part of the civilized world, and in every department of mechanics, that Dixon's Ticonderoga American Flake Graphite is the only lubricating graphite that will insure perfect results.

We have special pamphlets on the subject of graphite lubrication, and shall be glad to send copy to any one interested.

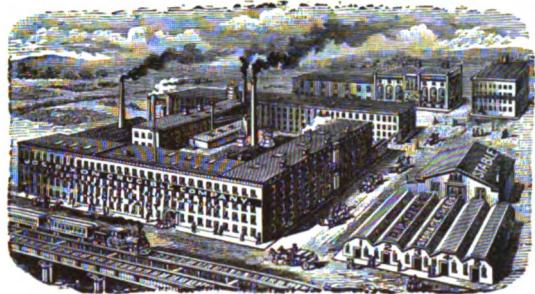
It is our main desire in this article to call attention to the fact that Dixon's Pure Flake Graphite may be very conveniently used in an ordinary squirt can.

Of course it goes without saying that the can should be perfectly dry and clean; any moisture or oil would cause the graphite to stick and thus prevent free delivery.

Either the coarse flake or the very finely pulverized graphite can be used, but when the coarse flake is used the nozzle of the can may require enlarging a trifle. This can be easily done with a small wire nail or any pointed instrument.

ESTABLISHED 1827.

INCORPORATED 1868.



JOSEPH DIXON CRUCIBLE CO. JERSEY CITY, N. J., U. S. A.

SALESROOMS AT

68 Reade St., New-York. 1020 Arch St., Philadelphia.
304 Market St., San Francisco. 28 Victoria St., London.

RESIDENT REPRESENTATIVES:

BOSTON. CHICAGO. ST. LOUIS. PITTSBURG.
PARIS. HAMBURG. VIENNA.

GRAPHITE MINES AND MILLS AT TICONDEROGA, N. Y.
CEDAR MILLS AT CRYSTAL RIVER, FLA.

OFFICERS:

E. F. C. YOUNG, JOHN A. WALKER, GEO. E. LONG,
President *Vice Pres. and Treas.* *Secretary*.

JERSEY CITY, N. J., February 1901.

SELECTION AND SURVIVAL.

In 1849 there were many styles of gold-washing on the Sacramento. One style, however, was gradually found to be more convenient than the others, and became after a while the standard way of washing out gold, which newcomers adopted as a matter of course.

There was a time when winter sperm oil was the standard lubricant. Then came rather crude forms of mineral oil. Then the more refined, and finally the modern mineral oils, which rapidly replaced the whale oils for lubricating purposes, especially in the United States. Then came the knowledge that the more solid the lubricant the better the lubrication. Particularly was this so with the introduction of heavy machinery, compound engines and high-pressure steam.

Lead, tallow, soapstone and mica were tried as lubricants, but without any specially noticeable success. Then some one tried graphite. It wasn't very good graphite, but it was better than any other form of solid lubricant.

Finally there appeared on the market Dixon's Pure Flake Ticanderoga Graphite. It came with testimonials from well-known mechanical experts and practical engineers as to its purity and efficiency. But people who had tried lead, mica, etc., and the ordinary graphite or blacklead, such as are used for facing, stove polish, etc., refused to try it. They had formed prejudices firmer and bigger than the Chinese wall. They laid aside the samples we sent or left with them.

There came a time, however, when something went wrong. The locomotive engineer found it impossible to cool a stubborn hot pin. As a last resort the sample of

Dixon's Flake Graphite was tried, and, wonderful to him, the pin cooled down and annoying delays ceased. Then the same engineer tried Dixon's Flake Graphite for a "groaning" cylinder, and the groaning was cured as quickly as the hot pin. Dixon's Pure Flake Graphite gave such different results from any other graphite that the engineer couldn't fail to recognize it. For a long time such engineers as were fortunate enough or wise enough to know of the virtues of Dixon's Flake Graphite kept the secret to themselves and were known as engineers who could run an engine faster, use less oil and have fewer delays and breakdowns than other engineers. It was a subject of much talk. After a time the secret leaked out, and it was found that the magic of it all was a can of Dixon's Flake Graphite securely locked up in the engineer's cab-seat and used as occasion required.

Stationary engineers had experiences similar to the locomotive engineers and with similar results. To-day it is an open secret throughout the entire mechanical field that Dixon's Pure Ticanderoga Flake Graphite is an indispensable article to every engineer and machinist, and to all who are interested in better lubrication.

THE GOOD SALESMAN.

Artemus Ward, in his journal for advertisers, *Fame*, outlines the make-up of a good solicitor which may well be applied to salesmen, and we therefore quote, substituting the word salesman:

It takes a very capable man to make a good salesman. One who knows how to shut his mouth as well as how to open it when necessary. One who understands how to keep his mind on the matter in hand even when the really interested party wavers. A man whose perseverance is perfectly balanced by politeness, tact and understanding; a man whose selfish side is strong but controlled by intelligence. A man who having learned to control himself is capable of influencing others—such a man will make a good salesman.

Don't tell everybody that you have a large fund of experience in the study of human nature. The very telling of it proves that you are mistaken. Do not talk of your magnetic powers, your almost hypnotic capacity. Ten to one you have not got it, but if you have, do keep it out of sight; it will serve you better so. Do not wind yourself up like a clock with some set speech. Be natural; be yourself. Copy no one, but study high and successful models.

One wins by one method, another by the very opposite. Most of them work as industriously as their line permits. It was a good salesman who placed but one order in eighteen months—but he sold suspension bridges. It is a very general mistake to suppose that unless tempted by a commission salesmen will not work actively. After years of hard experience in this line I want no men on commission; the irregular income and the irregular life which grows out of a commission does not produce the best results.

After all, a salesman is a man, an active one; beset by many temptations; troubled by many drawbacks; leading too often an irregular life in point of brains, if not of habits; too prone to think little of his calling; too apt to touch heaven when he has an order, and the nether regions when he is "turned down."

The truth serves the salesman best. He should pursue the truth as to the buyer's interest and advantage, but to do so he must himself have at least a speaking acquaintance with truth. He should fortify himself with facts, with tact, with business hints—and let the drinks and cigars go! He should be polite to every one—it pays. One thoughtless or over-smart salesman was rude to my bookkeeper, and as, like most men, I keep books in my head; his balance long stood on the debit side. But with all their faults they are a bright lot, and I love them. So here's to the salesman—may he call again!

1840—1900—1903.

In 1840 the Cunarder "*Britannia*" made her first voyage across the Atlantic. She had a wooden hull 207 feet long. The engine was of side-lever type with paddle wheels. The lubricant was whale oil.

In 1900 we had the White Star liner *Oceanic* with steel hull 704 feet long, and with enormously powerful engines and screw wheels. The lubricant used was mineral oil and Dixon's Pure Flake Graphite.

In 1903 the Hamburg-American will have launched a vessel 750 feet long that will be able to carry 2,000 passengers and 12,000 tons of cargo. On that vessel graphite lubricants will be in yet greater evidence.

A NEW ERASER.

The Dixon Company has put on the market an eraser for ink and pencil marks, which for novelty and convenience promises to be in large demand.



It consists of two solid cubes connected by a nickled tube, as shown in the illustration. Its shape prevents rolling from the desk and the erasive rubbers are of the very choicest quality. Its trade number is 1099. If your stationer cannot supply you, send us ten cents for a sample. Some think it worth three times the money, but ten cents will suffice.

WORK.

Mr. Alfred C. Harmsworth is visiting in the United States. He is the proprietor of the London *Daily Mail*, a millionaire in money, a millionaire in circulations and a millionaire in ideas. Although only thirty-five years old, he is the owner and conductor of many papers and periodicals.

It is claimed that the secret of his success lies in the fact that he is a restless and never-tiring worker. It is always the worker that accomplishes the best results. Bismarck urged hard work as the only safeguard for a true life. A few years before his death, when asked for a rule of life which could be simply stated and easily recommended, he said:

"There is one word which expresses this rule, this gospel—Work; without work life is empty, useless, and unhappy. No man can be happy who does not work. To the youth on the threshold of life, I have not one word but three words of advice to offer, 'Work, work, work.'"

Don't be afraid that you have not the natural ability to win the coveted position. If you have the ability to work you have the chief requisite. Dr. Halbrook claims that two persons of equal ability in youth will be of very unequal ability in mature age if one has a large experience in the world and the other a small one. Indeed, an inferior man in natural ability may outstrip a superior man if he will seek opportunities to improve himself and is willing to work hard.

GRAPHITE GREASE FOR SIGNAL SYSTEMS.

A report to the engineer of maintenance of way by the supervisor of signals, on a leading trunk line, showing the satisfactory results obtained with a waterproof graphite grease manufactured by the Joseph Dixon Crucible Company, says: "At one point, from October 1 to November 28, $\frac{1}{4}$ lb. of the graphite grease was used on locks, cranks and compensations on outside, and on machine in tower. The cost of putting on was found to be very little more than oil. The same test was made at another point on the road with the same good results. The supervisor found the waterproof graphite grease better than any other kind of lubricant, as it can be applied quickly and stays where it is put. It is also clean, and the water has no effect upon it. Therefore the supervisor strongly recommends the use of this grease for all the places named above. As the graphite used in the manufacture of this grease is Dixon's Pure Flake Graphite, the lubricating qualities are easily understood, and if the waterproof qualities are all that the manufacturers claim which the tests seem to demonstrate, its economy and usefulness for all bearings and exposed parts of railway signals are very evident."

LEARNED FROM A WOMAN.

If there is anything in which a woman is supposed to be especially deficient, it is in sharpening of a lead-pencil in a neat and workmanlike manner; but a certain woman reporter on a daily paper was observed always to have her pencils most beautifully pointed.

The masculine reporters watched her, but never succeeded in learning how she did it, and one day they sent a delegation to ask her about it.

"We have come," said one of the delegates, humbly, "to ask the secret of your gift as a pencil-sharpener. Your proficiency humiliates us."

"It is no secret," she said with a smile.

Thereupon she took a pencil from the hand of the speaker, raised the lid of her desk, drew forth a carpenter's chisel, rested the end of the pencil on the edge of the desk, and deftly shaped it into a true cone with a few "shaves" of the sharp instrument.

"There," she said, handing it back, "have you learned something from a woman?"

"We have," they said.

And possibly the reader has also.—*Youth's Companion*.

Don't spurn your poor relations
For there's no way telling when
Some lucky day the poorest may
Just strike it rich, and then—

—*Law Bulletin*.

IT CONVERTED HIM.

An engineer on the lookout for anything that would improve his running and lessen possible delays due to hot pins, etc., tried a sample package of Dixon's Pure Flake Graphite and in time sat down and wrote as follows:

"On the very first trial I was converted to the belief that it is the only thing for hot pins. On a California time freight, the fastest train we have, I had a main pin throw the babbitt in the first 25 miles. I run 30 miles further on oil. The pin got so hot I couldn't run farther. Took cup off, cooled it, filled it with the graphite and oil and never touched it again the balance of the trip, 115 miles, and made up 1 hour and 40 minutes on the run. I would not have taken a dollar for the sample after that trial."

The same engineer then proceeds to ask where he can buy Dixon's Graphite. It does not seem as though the railroad companies ought to oblige their engineers to purchase a lubricating material that is so pre-eminently useful in reducing wear and tear of the companies' locomotives.

ORIENTAL DIPLOMACY.

The presence of the Japanese crown prince in Paris has reminded some one of a story.

It was at the time of the exhibition in 1867. A Japanese embassy went to Paris to treat for three free ports in France, in return for which France was to have three in Japan. The negotiations proved short and amiable.

"Make your choice," said Japan, "we will chose afterward."

The Minister of Foreign Affairs selected Yokohama, Yeddo and Han-Yang.

The embassy made no objection; they simply smiled and went on their way.

Some time afterward Japan sent word that the three ports mentioned were agreed to, and in return Japan desired Havre, Marseilles and Southampton.

The last named gave the French officials fits. They never laughed so much before and certainly never since. Southampton a French port! No, it was too good. Gently, but unmistakably, they explained the situation.

"Why, Southampton is in England," they replied.

"We know that," came the cool response; "but, then, Han-Yang is in Korea."

Whereupon the French officials collapsed.

—Spare Moments.

OLD TRICK IN NEW GUISE.

Some years ago a chap in Kansas City advertised to send for seventy-five cents instructions for writing without pen or ink. His instructions were: "Use a lead pencil."

Now a fellow in Racine, Wis., in advertising for agents, says:

"Throw away your pen and ink! My apparatus will enable you to write clearly and indelibly without the use of either. The triumph of the century! Agents' samples 25 cents. Send quick; territory going fast."

The agent's sample is a common indelible pencil, such as may be bought anywhere for two or three cents.

Productions of the Dixon Crucible Co.

Dixon's Black-Lead Crucibles and Retorts.

All sizes and for all purposes. Bowls, Dippers, Stirrers, Stoppers, Nozzles, Muffles, Sleeves, Etc.

Dixon's Brazing Crucibles.

Made in several shapes for dip-brazing.

Dixon's Graphite Boxes and Covers.

For baking carbons and filaments for electric lighting.

Dixon's Fine Office and Drawing Pencils.

Unequalled for smooth, tough leads and uniformity of grading.

Dixon's Colored Crayons.

In wood or solid. For schools, railroads, editors or factory.

Dixon's Lumber Leads.

Black or colors; for green or dry lumber.

Dixon's Felt Erasive Rubber.

For erasing pencil marks, type-writer work, or ink.

Dixon's Carburet of Iron Stove Polish.

The old reliable; in cake or bulk form.

Dixon's Pure Flake Lubricating Graphite.

A solid lubricant for all frictional surfaces.

Dixon's Special Graphite No. 635.

For lubricating cylinders of gas engines and all close or delicate mechanical parts.

Dixon's Electrotyping Graphite.

Used by the majority of practical electrotypers of this country.

Dixon's Hatter's Lead.

For coloring hat bodies.

Dixon's Plumbago for Shot Polishing.

Dixon's Plumbago for Powder Glazing.

Dixon's Plumbago Foundry Facings.

Dixon's Yacht Plumbago.

For lubricating and smoothing bottoms of yachts.

Dixon's Graphite Waterproof Grease.

For gears, wire ropes, hoisting chains and general machinery.

Dixon's Graphite Axle Grease.

Better and cleaner than castor oil for trucks, wagons, carriages.

Dixon's Graphited Wood Grease.

For use on trolley car gears which are enclosed in a gear case.

Dixon's Graphited Oil.

For use in all places where the use of a grease is impracticable.

Dixon's Graphite Cup Greases

For use in cups or open bearings, on spindles, shafting, etc.

Dixon's Oiled Graphite

Dixon's Lubricating Compound No. 688.

For enclosed gears of electric automobiles.

Dixon's Silica-Graphite Paint.

For metal or wood-work, roofs, bridges, telegraph and trolley poles, smoke-stacks, boiler fronts, and iron construction work.

Dixon's Graphite Pipe-Joint Compound.

For steam, gas and water piping, smearing gaskets and flanges.

Dixon's Cycle Chain Graphites.

For perfectly lubricating chains and gears of bicycles.

Dixon's Graphitoleo

For lubricating bicycle chains, sprockets, pivots and pins; gun locks, and for general use.

Dixon's Commutator Graphite

Will glaze the commutator with the finish so much desired by electrical engineers.

Dixon's Anti-Flux Brazing Graphite.

To prevent the speiser from adhering when brazing.

Dixon's Crucible Clay and Graphite Mixture.

For lining and repairing furnaces and fire boxes.

Dixon's Stove Cement.

For repairing stove or range lining.

Dixon's Traction Belt Dressing.

For preserving leather belts and to prevent slipping.

Dixon's Solid Belt Dressing.

Convenient for those who prefer a solid dressing.

Dixon's Graphite Resistance Rods.

From one-eighth to one inch diameter; any resistance required.

Dixon's Graphite Products for Electricians.

Special circulars with detailed information sent on request.

NEW YORK
MARCH 1, 1901
GRAPHITE

Graphite

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THE HERO OF THE FUTURE.

The Engineering Magazine says:—“The hero of the future is the captain of industry, and not the captain of armies. The struggle is to produce the most, and the most cheaply—not to destroy the most and the most quickly. The strong nation is the one whose manufactures and whose merchant marine reach farthest in supplying the wants of the peoples, and return best laden with the needed goods of other lands. The keynote of success, the secret of power, is economy—economy in production, in methods, in management. The vast growth of manufacturing establishments must be met by adequate growth and adjustment in administration. Organization must replace the individual supervision and control which was adequate even to the great works of half a century

ago. In the study of works management lies the highway to larger success than the material conditions of the past ever made possible. Before managers now lies the duty of meeting the conditions—and the other great duty of using their influence and their power in the affairs of the nation, so that justice and wisdom may govern the state at home and abroad. The task is a responsible one, but home and foreign polities have proved, during the year just closing, the triumphant success which follows when the industry and commerce of the country speak clearly to its rulers.”

ADVANCED ELECTROTYPING.

In an article under the above heading *The Progressive Printer* says that many efforts have been put forth to discover a substitute for graphite in molding and preparation of molds for the battery. Bronze powder, tin powder and treating the mold with a solution of nitrate of silver are some of the materials used, but graphite is still in general use for wax molds. The time required for coating a mold with graphite has been reduced, from ten to fifteen minutes, by the old apparatus, to one minute with improved appliances.

The making of an electrotype is not entirely a mechanical operation, but rather a combination of mechanics and chemistry, and is not one of the exact sciences, in that no one can depend on positively uniform action of the materi-

als employed. While the electrotyper generally produces very nearly what he tries to make, yet there are so many elements of chance, which, at almost always the wrong time, play “hob” with his work, that he is frequently led to harbor thoughts that probably he should have chosen some other occupation.

OF INTEREST TO GAS COMPANIES.

We sent a small sample, about four ounces, of Dixon's Graphite Compound to one of the large gas companies. The superintendent of the gas company wrote: “We received the small sample and tried it on our generator doors and believe it is just what we want. Please send us a small package.”

We sent a 10-pound package, and after some time we received another letter from the same superintendent, saying: “Dixon's Graphite Compound is the best material I ever found for generator doors. Please send another package of about six times the size of the last.”

WHAT SHE SAID.

“If I were a man,” the woman said,
“I'd make my mark ere I was dead;
I'd make it with a Dixon lead.”
And now you know what the woman said.

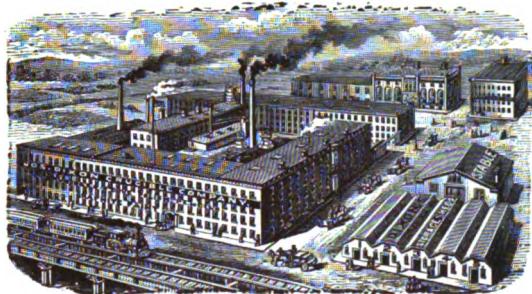
CASTING ALUMINUM.

FROM G. & F., NEW HAMPTON, IOWA.—We want to make aluminum patterns and would be glad of any information on molding and pouring the metal. Will a common molding ladle do for the purpose?

ANSWER.—An iron ladle should not be used for melting aluminum. The aluminum becomes contaminated with iron, which makes it brittle. Use a graphite crucible and no flux of any kind. Common salt has been used, but has not improved the metal. Melt and pour at as low a heat as will allow the metal to run full in the mold. Use fine sand for molding, such as used by brass founders, and bake the mold, which should be previously dusted with fine charcoal or plumbago. A few trials will give the required experience. A brass founder's furnace or a gas furnace is the best, but a temporary furnace may be built over a forge tuyere. The shrinkage of aluminum castings is much greater than for brass. An allowance of $\frac{1}{4}$ inch per foot in patterns should be made. In molding make the gates the same as for brass and pour quickly to make sharp castings.—*Metal Worker*.

ESTABLISHED 1827.

INCORPORATED 1868.



JOSEPH DIXON CRUCIBLE CO. JERSEY CITY, N. J., U. S. A.

SALESROOMS AT

68 Reade St., New-York. 1020 Arch St., Philadelphia.
304 Market St., San Francisco. 28 Victoria St., London.

RESIDENT REPRESENTATIVES:

BOSTON. CHICAGO. ST. LOUIS. PITTSBURG.
PARIS. HAMBURG. VIENNA.

GRAPHITE MINES AND MILLS AT TICONDEROGA, N. Y.
CEDAR MILLS AT CRYSTAL RIVER, FLA.

OFFICERS:

E. F. C. YOUNG, JOHN A. WALKER, GEO. E. LONG,
President. *Vice Pres. and Treas.* *Secretary.*

JERSEY CITY, N. J., March 1901.

SOME BRITISH IDEAS OF BLACKLEAD.

The New York *Sun* says that in a case settled in England some time ago the Recorder was brought up short by a phrase used by the counsel for defence, who spoke of a transaction concerning a pound of "blacklead." This is a common and useful article, but the counsel, on being asked to explain its nature, said it was a black substance used for boot polishing. The Recorder thought it was a mineral used in lead-pencils, but another barrister asserted it to be a "tough kind of lead used for roofing houses." The case was brought to a standstill, and one lawyer, unsurpassed in legal knowledge, declared that blacklead was a slang term for pig-iron, as produced in the North Country! A fourth expounder of the law vaguely suggested it was the opposite of white lead; and, finally, a domestic servant put the court right, and the assembly at last learned that it was used for blacking stoves.

SIGHT-FEED GRAPHITE LUBRICATOR.

In *Graphite* for November, 1900, we illustrated and described to some extent a new graphite sight-feed lubricator. Since that time a new style has been made, which will be sold at a reduced price. The manufacturers of the lubricator think it will be way ahead of the old style, as well as much cheaper. One of the best known and largest steam plants in Chicago has cut off all the oil on their big engine and say that the dry graphite works better than when mixed with any oil. It forms a slick, smooth surface without any tendency to gum.

The twentieth century will see great strides in graphite lubrication.

A PAINTER'S OPINION.

A well-known contracting roofer and painter of Hartford, Conn., writes us as follows:

"Having satisfied myself that Dixon's Silica-Graphite Paint is the best article on the market for tin roofs, I am using much effort to apply it, and have greatly increased its consumption during the past year, as you will see by my orders. I now have some properties to refer to. I have two men whom I put on this class of work, and they have learned to apply the paint very carefully, brushing it out well and evenly and not applying too thick. I use four-knot, roof, long handle brushes and keep the paint well stirred so as to prevent any settling. I do not allow my men to apply any paint when the surface or the atmosphere is the least damp, and so I never have any peeling of the paint."

This man knows the secret of durable and protective painting.

1. Dixon's Silica-Graphite Paint mixed with best fire boiled linseed oil.
2. Careful application—paint well brushed with proper brushes.
3. Surfaces dry and in good condition to receive and hold the paint.

SUPERINTENDENT WANTED.

Editor American Machinist:

During the last six months we have had four superintendents at our shop, and, although they were all smart men, none of them seemed to fill the bill; so I thought perhaps some of your readers would like to try for the job.

The first one (Brown, we call him) was a good fellow, a good draftsman and mechanic, and the boys liked him. He was quiet, but he had one fault—he was too narrow. He would go down to the foundry to see when a casting would be ready, instead of sending a man, and he would run his legs off rather than send a boy to do an errand; he couldn't seem to see that the boys legs were cheaper than his (as well as shorter).

Well, then we had "Jones." He was a good fellow, too, I guess, but he seldom came out into the shop, and I never heard him give an order that was mechanical; that is, he did not know the technical names of tools, and if he could make a sketch, I never saw him do it. But he could systemize first rate. He got out some good time cards, a time clock and a pay-off system. Then he went off.

Then No. 3 came. He was a mechanic, had a nice set of tools, could tell a man how to do anything, and could do it himself if the man could not, and would do it, too, quite often; but he had two faults: He was too free with the men; would go in and take a glass with the foremen, and stand on the sidewalk and chin with the girls. He couldn't manage the office, but he had a lot of stick-to-it in him, and he could talk as strong as any man I ever saw; but 'twas no use—he had to go.

Then No. 4 appeared. (Never mind his name.) He was a hustler; he could cover more ground than any man I ever saw, and he was there early and late. He used to carry a big note-book and set down everything in it—"carried his brains in his fist," the boys used to say. Well, he got out

more work to the square foot than Nos. 1, 2 and 3 put together. He was not a mechanic, but just a hustler. He would be around right after 7 and the last thing before 6 o'clock; but he never seemed to get the good-will of the men, and after he had been there two or three months he had a fuss with some of the directors, threw up his job and left us.

We don't know who the next man will be—some one who can run the place, we hope. A. P. PRESS.

THE CRACKING OF CRUCIBLES.

The cause of the frequent cracking of crucibles may be traced to the fact that the walls contain moisture. With quick heating the same is transformed into steam, which cannot escape quickly enough, and, in consequence of overheating, takes on a tension, which finally the walls of the crucible can no longer resist, thus causing the cracking of the largest diameter. In order to guard against this evil, it is advisable to heat the crucible slowly before use, so that the moisture held in its walls can evaporate. This previous heating should be done, even if the crucible is well dried out, not having been used for melting, but kept in damp and cold rooms.—*Die Edelmetall-Industrie*.

IF PENCILS WERE VOTES.

"All we need to carry this election," said the Democrat, "is—"

"A good supply of pencils," interrupted the Republican. "Pencils!" exclaimed the Democrat.

"Certainly. If pencils were votes, your mathematicians wouldn't leave us a single state."—*Chicago Post*.

MEAT EATERS.

In *Graphite* for December, 1899, we quoted a Kansas philosopher on the subject of pork eating. Among the quotations were the following:

"Americans are the most frisky people on earth, because they eat the most hog meat."

"A vegetable-diet woman is as cold and clammy and unlovable as a turnip. If you wish to put roses in the cheeks of your girls, vitality in their every motion, and brains in their heads, feed them on meat."

"If you want your boy to get a job and hold it, go to the front and amount to something, give him bacon, grease, ham, fat or tallow three times a day."

Our esteemed vice-president, while resting himself in the Hotel Metropole, Bruxelles, clipped the following from some paper and sent it to the editor of *Graphite* with the remark: "As Americans are believed to be 'hustlers' more than any other people, this may be the reason why?"

AN OBJECT LESSON.

The annual consumption of flesh food per inhabitant is, in the

United States.....	120 lbs.	Scandinavia.....	67 lbs.
Great Britain.....	105 lbs.	Austria.....	64 lbs.
France.....	74 lbs.	Spain.....	49 lbs.
Germany.....	69 lbs.	Russia.....	48 lbs.
Netherlands.....	69 lbs.	Italy.....	23 lbs.

The energy of the inhabitants is pretty much in the same proportion.

Productions of the Dixon Crucible Co.

Dixon's Black-Lead Crucibles and Retorts.

All sizes and for all purposes. Bowls, Dippers, Stirrers, Stoppers, Nozzles, Muffles, Sleeves, Etc.

Dixon's Brazing Crucibles.

Made in several shapes for dip-brazing.

Dixon's Graphite Boxes and Covers.

For baking carbons and filaments for electric lighting.

Dixon's Fine Office and Drawing Pencils.

Unequalled for smooth, tough leads and uniformity of grading.

Dixon's Colored Crayons.

In wood or solid. For schools, railroads, editors or factory.

Dixon's Lumber Leads.

Black or colors; for green or dry lumber.

Dixon's Felt Erasive Rubber.

For erasing pencil marks, type-writer work, or ink.

Dixon's Carburet of Iron Stove Polish.

The old reliable; in cake or bulk form.

Dixon's Pure Flake Lubricating Graphite.

A solid lubricant for all frictional surfaces.

Dixon's Special Graphite No. 635.

For lubricating cylinders of gas engines and all close or delicate mechanical parts.

Dixon's Electrotyping Graphite.

Used by the majority of practical electrotypers of this country.

Dixon's Hatter's Lead.

For coloring hat bodies.

Dixon's Plumbago for Shot Polishing.

Dixon's Plumbago for Powder Glazing.

Dixon's Plumbago Foundry Facings.

Dixon's Yacht Plumbago.

For lubricating and smoothing bottoms of yachts.

Dixon's Graphite Waterproof Grease.

For gears, wire ropes, hoisting chains and general machinery.

Dixon's Graphite Axle Grease.

Better and cleaner than castor oil for trucks, wagons, carriages.

Dixon's Graphited Wood Grease.

For use on trolley car gears which are enclosed in a gear case.

Dixon's Graphited Oil.

For use in all places where the use of a grease is impracticable.

Dixon's Graphite Cup Greases

For use in cups or open bearings, on spindles, shafting, etc.

Dixon's Oiled Graphite

Dixon's Lubricating Compound No. 688.

For enclosed gears of electric automobiles.

Dixon's Silica-Graphite Paint.

For metal or wood-work, roofs, bridges, telegraph and trolley poles, smoke-stacks, boiler fronts, and iron construction work.

Dixon's Graphite Pipe-Joint Compound.

For steam, gas and water piping, smearing gaskets and flanges.

Dixon's Cycle Chain Graphites.

For perfectly lubricating chains and gears of bicycles.

Dixon's Graphitoleo

For lubricating bicycle chains, sprockets, pivots and pins; gun locks, and for general use.

Dixon's Commutator Graphite

Will glaze the commutator with the finish so much desired by electrical engineers.

Dixon's Anti-Flux Brazing Graphite.

To prevent the spelter from adhering when brazing.

Dixon's Crucible Clay and Graphite Mixture.

For lining and repairing furnaces and fire boxes.

Dixon's Stove Cement.

For repairing stove or range lining.

Dixon's Traction Belt Dressing.

For preserving leather belts and to prevent slipping.

Dixon's Solid Belt Dressing.

Convenient for those who prefer a solid dressing.

Dixon's Graphite Resistance Rods.

From one-eighth to one inch diameter; any resistance required.

Dixon's Graphite Products for Electricians.

Special circulars with detailed information sent on request.

FOR THE PROTECTION OF OUR CUSTOMERS.

The specification of Dixon's Silica-Graphite Paint by prominent architects and consulting engineers who desire the very best protective paint for the steel work of office buildings, has led to the introduction of hundreds of so-called graphite paints, which are manufactured of a cheap, soft, amorphous form of graphite usually used for foundry facings and stove polish, and mixed with fish or adulterated linseed oil.

Dixon's Silica-Graphite Paint being the original and best graphite paint manufactured, it has been found necessary for the protection of the architect, owner and ourselves, to give special attention to the sale and proper use of the paint.

On specified work, upon request, we give information as to the amount of paint delivered in original sealed packages, ready mixed for use, to the mill, and building site, and as to the proper application of the paint to the steel work.



In studying the architecture of buildings recently erected in the financial district of New York City, the million dollar office building of the Atlantic Mutual Insurance Company, Wall and William streets, expresses the very best decorative features of ancient and modern architecture to be seen.

It is appropriate to state that the building was designed by the great architects, Clinton & Russell, 32 Nassau Street, and constructed by the Thompson-Starrett Company, Battery Park Building, New York City.

Two coats of Dixon's Silica-Graphite Paint were properly

applied to the steel work by the contractors, and the perfect and handsome coating produced by this paint secured for it the favorable expressions of the architects, contractors and owners.

SPRING PAINTING.

It is not too early even in March to begin to consider the subject of repainting, which always comes up in Spring. We present herewith the boiled-down facts concerning Dixon's Silica-Graphite Paint:

GRAPHITE is as pure, sweet and healthful as charcoal, and has no bad odor.

It is not affected by heat or cold, climate or time.

It is not affected by acids or any known chemical.

GRAPHITE PAINT is equally useful for metal or wooden surfaces.

It can be used on old work and on new work.

It may be used on the top of any old paint.

It is unsurpassed as a priming coat.

It is beautiful, and never fades.

DIXON'S SILICA-GRAPIHTE PAINT lasts four or five times as long as any other paint.

It covers two or three times more surface.

It is made in four colors.

For durability, economy, and beauty of finish, it stands without a rival.

LOOKED AS THOUGH NEWLY PAINTED.

Mr. S. A. Kerns, of the Rock Island Plow Company, relates his experience with Dixon's Silica-Graphite Paint as follows: "About sixteen years ago some one called my attention to this paint, and I sent for some and painted some new tin roofs. Ten years after I sold the property, and the buyer said: 'I notice you have just painted the roof.' It is now sixteen years since the roofs were painted, and they are good yet. I have recommended Dixon's Silica-Graphite Paint to many of my friends and have yet to find one that has not had the best of results."

BALZAC says if a man in misfortune can once form a romantic hope, by a train of reasons more or less correct, with which he stuffs a pillow on which to lay his head, he is often saved.

Our friend Jos. M. Wade, publisher, editor and business manager of *Fibre and Fabric*, builds the same idea on a rational instead of a sentimental ground. He says that men who are willing to work, and to whom work is a pleasure, are bound to succeed; it does not make much difference what the business may be. Such men will rise above and outlive any misfortune. If they fail in getting through one door they are not defeated in their object. They will get there just the same, only a little later. They never fail in what they undertake.

AUTOGO, BUT WON'T.

It was an automobile,

Began to balk and rant,

And when 'twas told to move on, said,

"I auto, but I shan't!"

—*Harper's Bazar.*

Graphite

VOL. III.

APRIL, 1901.

No. 5.

Issued in the interest of Dixon's Graphite Productions, and for the purpose of establishing a better understanding in regard to the different forms of Graphite and their respective uses.

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PAINT.

Different Purposes—Different Climates.

The selection of the most durable paint for steel viaducts, bridges, iron and tin roofs, smoke-stacks, gas holders and iron covered buildings, is the problem at this time of the year that confronts owners, chief engineers and purchasing agents.

A great many essays have been written on the subject of protective paints, but the practical man is not to be misled by essays; so-called "paint tests" or elaborate advertisements written by advertising agencies.

The only true proof of the worth of a protective paint is weather exposure time tests. The statement cannot be disputed that the most durable paint is the most economical. In the construction and maintenance of steel work,

the importance of its protection from corrosion, calls for facts as to a paint's durability in its use for different purposes in different climates.

It is impossible to present to our readers the hundreds of records on file as to the durability of Dixon's Silica-Graphite Paint in its use on all classes of iron work; along the sea-coast, in the South, West and foreign countries, but we present a few interesting records.

A letter from the most prominent bridge painter in the United States:

Harrison Bldg., PHILADELPHIA, PA., May 8, 1900.

Joseph Dixon Crucible Co.

GENTLEMEN:—Referring to your Silica-Graphite Paint, I am pleased to say that this paint has been used by me with excellent results. I have found it to be uniform in quality and thoroughly ground, thereby assuring a large spreading capacity, and when used in tests, under equal conditions with other paints, I have found that it will spread farther and present a better appearance than any other higher priced paint.

It is impossible for me to say just what the spreading capacity of your paint is in square feet, as that depends in a large measure upon the skill of the painter, the condition of the iron (or other material) upon which it is used, the temperature, etc., but it is sufficiently large to warrant you in the claims you make for it.

I am now using your Silica-Graphite Paint on the Willis

Avenue Bridge, New York City, and have used it on other work, and have always found that you were fully justified in your claims for it. It works smoothly under the brush, and is in every way a strictly "High Grade Paint," and in my judgment a "Metal Preservative."

Yours very truly,

GEORGE S. MACLAURIN.

Attention is called to the fact that Dixon's Silica-Graphite Paint not only protects from rust for years, but under all conditions of service, retains its original color and presents a handsome appearance.

A record follows as to its durability on an iron covered elevator building in the South:

Joseph Dixon Crucible Co.

GENTLEMEN:—Before using Dixon's Silica-Graphite Paint on our elevator, we could not find any paint that would remain thoroughly good for two years. Our building has no gutters on it, and the trouble seemed that the dust settling on the water running off the building would form an acid, and eat the paint. The immense volume of water running off the roof and down the sides washed it off. The writer had the main body of the building painted with two coats of your graphite, and the cupola one coat, about seven years ago, and it seems to be in good shape yet.

I am very much pleased with its lasting qualities.

Yours truly,

KENTUCKY PUBLIC ELEVATOR CO.,
Louisville, Ky.

The high temperature from the rays of the sun, action of wind-driven dust, rain and snow, make the conditions of service on tin roofs and iron covered buildings most severe.

Dixon's Silica-Graphite Paint withstands these conditions perfectly, and does not fade, blister, peel or crack.

Another purpose for which this paint is particularly adapted is the protection of tin roofs along the sea-coast. It does not taint or poison water used for drinking or cooking purposes, and is absolutely unaffected for years by the great rust-forming element—salt air.

A few interesting facts from a large property owner:

Joseph Dixon Crucible Co.

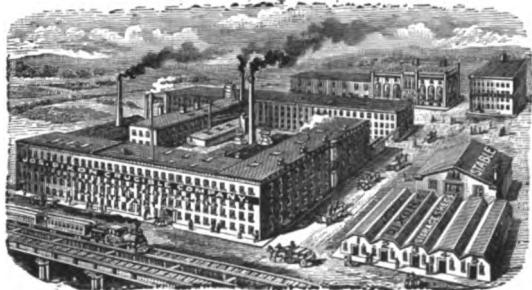
GENTLEMEN:—I have used Dixon's Silica-Graphite Paint on tin roofs of several buildings, and have used it on my metal roofs at Belmar, N. J., a building that stands about 150 feet from the ocean. It has been on the roof for four years, and is perfect to-day. It beats all other paints in resisting the action of salt air. I have had it on other roofs for ten years, and it is good to-day.

Yours truly,

ROBERT JOHNSTON, Contractor,
Philadelphia, Pa.

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OFFICERS:

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President *Vice Pres. and Treas.* *Secretary.*

JERSEY CITY, N. J., April 1901.

For durability and beauty of finish, the four colors of Dixon's Silica-Graphite Paint stand without a rival. The fact that thousands of concerns are using this paint with economy and satisfaction, is convincing proof of its adaptability for different purposes and different climates.

Special attention is always given to the appearance of steel smoke-stacks, as they are conspicuous and should present a well-kept appearance.

Here is a convincing record as to the durability of Dixon's Silica-Graphite Paint on steel smoke-stacks:

COLUMBUS, O., Feb. 8, 1900.

Joseph Dixon Crucible Co.

GENTLEMEN:—The 152 feet steel smoke-stack of this station was erected and put into service November, 1894, after receiving two coats of Dixon's Silica-Graphite Paint; one before erection and the other after, and the stack has been in continuous use up to the present time. The bell of this stack is constructed of wrought iron, and finding that it was rusting in spots, we decided in November, 1899, to give it a coat of your Graphite Paint. On examination we found the paint on the remaining portion of the stack apparently as good as when first put on, *five years ago*, although deadened somewhat in appearance; so we concluded to paint the whole stack.

Yours truly,

THE COLUMBUS-EDISON ELECTRIC LIGHT CO.,
A. W. Fields, Secretary.

The great protective value of Dixon's Silica-Graphite Paint is shown in its extensive use by gas concerns. The conditions of service demand a coating of great tenacity, one that will not be affected by submersion and exposure.

A letter from the West:

IONIA GAS LIGHT & COKE CO.,

IONIA, MICH., March 26, 1900.

Joseph Dixon Crucible Co.

GENTLEMEN:—In reply to your inquiry relative to Dixon's Silica-Graphite Paint, would say that our holder was painted three years ago with your Graphite Paint, and with very gratifying results. My experience with said paint has proven to me, that a given quantity of it will cover more surface and offer greater resistance to the formation of rust than any other paint I have ever used in the past seventeen years on my gas holders.

Very truly yours,

E. F. GALLAGHER.

Correspondence is solicited on the subject of protective paints for all classes of metal work.

SALESMEN.

There are two distinct classes of salesmen—the salesman who is governed by price, and the salesman who is governed by quality. The first calls attention to cheap goods and dilates on the great value that is to be obtained for little money. Such men cannot rise to superior goods and are not the money-making men for dealers or manufacturers.

The quality salesman never mentions price, he holds forth on quality only, and fully impresses the buyer that he needs the goods, in fact that they are indispensable. The price is the last thing mentioned, and sometimes the buyer finds he has written the order before he has really asked the price, or, if he did ask it the clever salesman avoided the question by calling attention to another superiority of his goods.

Hypnotism may be a fake with no foundation in fact, but there is something akin to it possessed by some salesmen.

A DURABLE PAINT.

Mr. O. H. Guttridge, of Atlantic City, N. J., is one of the strong advocates of Dixon's Silica-Graphite Paint. He stated to one of our representatives that he would bet \$100 to a cent that he could put two coats of Dixon's Silica-Graphite Paint on any roof in Atlantic City and the roof would not need repainting in twelve years.

He made the following test in the year 1889. A flat roof two blocks from the ocean was painted with the following paints, the roof being divided into two parts:

First part was painted with pure zinc and linseed oil, with a little litharge; it lasted four years and then chalked or peeled off.

The second division was painted with pure white lead and linseed oil; it lasted two years and chalked or peeled off.

Section 3 was painted half zinc and half lead; it lasted between three and four years.

Section 4 was painted with oxide of iron with linseed oil; it lasted two years.

Section 5 was painted with Spanish brown with linseed oil, and lasted only six months.

On sections 6, 7 and 8 he used three kinds of the best ready-mixed paint; none of these lasted longer than nine months.

Section 9 was painted with Dixon's Silica-Graphite

Paint. He bought it thick, ground in oil, and mixed it himself with raw linseed oil and added a little litharge. It lasted nine years.

He also confirmed a report that our representative had received sometime ago, in regard to the roof of the old St. Charles Hotel, this having been painted twenty years ago with Dixon's Silica-Graphite Paint. When the hotel was torn down, the roof was still in good condition, and Mr. Wootton, the old proprietor, also said that Dixon's Silica-Graphite Paint was by long odds the best paint that could be obtained for surfaces exposed to the salt air from the ocean.

Any paint that can successfully withstand the destructive salt-laden air from the ocean will be found proportionately durable for all inland painting.

DISCOVERY IN CONCORD.

We are indebted to our friend, Jos. M. Wade, of *Fibre and Fabric*, for the following:

A curious discovery was made in Concord, Mass., recently. In the attic of the Thoreau homestead was found a quantity of lead pencils all bearing the stamp "Thoreau & Son." The naturalist and his father once made lead pencils for a living, and for years a great store of their completed product was hidden away just under the ridge pole of the homestead. Those pencils to-day are in demand for other purposes than writing. In the Deane Thoreau collection there is a letter written from North Truro, Cape Cod, when the naturalist was upon those journeyings of which the world now knows.

A MYSTERY IN LUBRICATION.

Sometime ago the superintendent of a very large and prominent plant introduced a system of graphite lubrication for his plant. Not getting any report from him we asked our representative to call and learn if the system had proven satisfactory. Our man's report is as follows:

"Mr. Blank says the reason we have received no data, is this:—Friction cards were taken sometime ago, but they could not be figured out. They showed virtually that the steam travelled back into the boiler, which, of course, is an utter impossibility. The fly-wheel, of course, was traveling at a high rate of speed, and when the friction cards were taken off, the momentum was such that there was practically no steam required to keep up the revolutions at a high speed after the graphite had been used. I can readily understand that neither Mr. Blank nor his company would want to go into print with a statement that the friction was less than nothing. Mr. Blank said they considered it somewhat of a mystery, but could, if they went into it deep enough, solve it, but didn't consider it worth the powder. I anticipate that the whole thing will work out eventually to the profit of Dixon, and that they will use graphite to a large extent in lubrication."

Over the winter glaciers
I see the summer glow,
And through the wild-piled snowdrift
The warm rosebuds below.—*Emerson.*

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All sizes and for all purposes. Bowls, Dippers, Stirrers, Stoppers, Nozzles, Muffles, Sleeves, Etc.

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For lubricating cylinders of gas engines and all close or delicate mechanical parts.

Dixon's Electrotyping Graphite.

Used by the majority of practical electrotypers of this country.

Dixon's Hatter's Lead.

For coloring hat bodies.

Dixon's Plumbago for Shot Polishing.

Dixon's Plumbago for Powder Glazing.

Dixon's Plumbago Foundry Facings.

Dixon's Yacht Plumbago.

For lubricating and smoothing bottoms of yachts.

Dixon's Graphite Waterproof Grease.

For gears, wire ropes, hoisting chains and general machinery.

Dixon's Graphite Axle Grease.

Better and cleaner than castor oil for trucks, wagons, carriages.

Dixon's Graphited Wood Grease.

For use on trolley car gears which are enclosed in a gear case.

Dixon's Graphited Oil.

For use in all places where the use of a grease is impracticable.

Dixon's Graphite Cup Greases

For use in cups or open bearings, on spindles, shafting, etc.

Dixon's Oiled Graphite

Dixon's Lubricating Compound No. 688.

For enclosed gears of electric automobiles.

Dixon's Silica-Graphite Paint.

For metal or wood-work, roofs, bridges, telegraph and trolley poles, smoke-stacks, boiler fronts, and iron construction work.

Dixon's Graphite Pipe-Joint Compound.

For steam, gas and water piping, smearing gaskets and flanges.

Dixon's Cycle Chain Graphites.

For perfectly lubricating chains and gears of bicycles.

Dixon's Graphitoleo

For lubricating bicycle chains, sprockets, pivots and pins; gun locks, and for general use.

Dixon's Commutator Graphite

Will glaze the commutator with the finish so much desired by electrical engineers.

Dixon's Anti-Flux Brazing Graphite.

To prevent the spelter from adhering when brazing.

Dixon's Crucible Clay and Graphite Mixture.

For lining and repairing furnaces and fire boxes.

Dixon's Stove Cement.

For repairing stove or range lining.

Dixon's Traction Belt Dressing.

For preserving leather belts and to prevent slipping.

Dixon's Solid Belt Dressing.

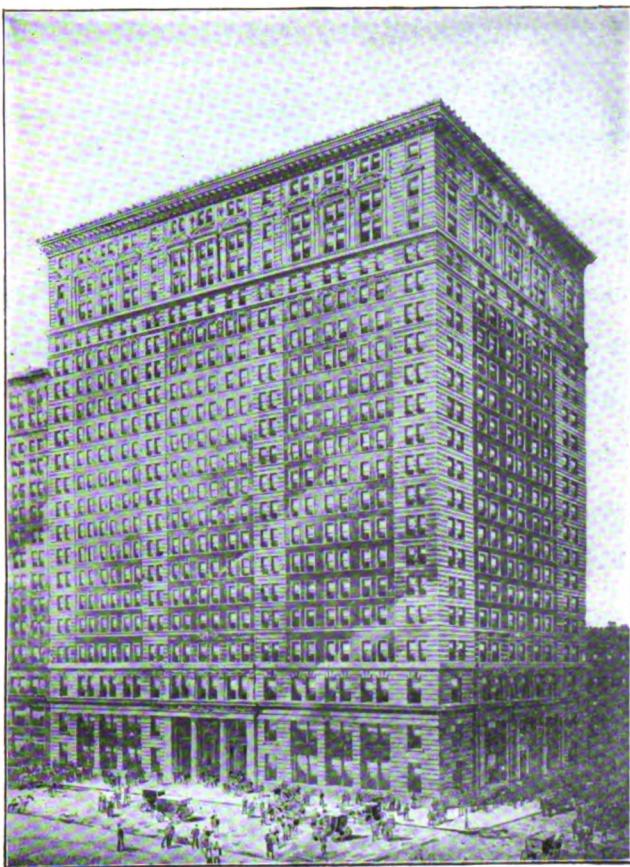
Convenient for those who prefer a solid dressing.

Dixon's Graphite Resistance Rods.

From one-eighth to one inch diameter; any resistance required.

Dixon's Graphite Products for Electricians.

Special circulars with detailed information sent on request.



BROAD-EXCHANGE BUILDING.

LARGEST OFFICE BUILDING IN THE WORLD.

The past six months have witnessed the erection of the largest office building in the world, at the corner of Broad Street and Exchange Place, New York City. This structure is 20 stories high, fronts 236 feet on Exchange Place, 106 feet on Broad Street, with a wing extending about 100 feet south to Beaver Street, and covering an irregular area of about 27,000 feet.

The remarkable rapidity with which this immense structure has been erected has attracted the attention of the engineering and architectural world.

The building is now receiving its interior finish, and upon completion May 1, will have cost eight million dollars.

This imposing and elegant structure was designed by Clinton & Russell, architects, 32 Nassau Street, and constructed by the Geo. A. Fuller Co., 137 Broadway, New York.

The 10,000 tons of steel used in the construction of this building was furnished by the Carnegie Steel Company, of Pittsburg, Pa. A priming coat of Dixon's Silica-Graphite Paint was applied at the mill by the steel contractors, and a finishing coat of Dixon's Silica-Graphite Paint was applied after the erection of the steel work by the Geo. A. Fuller Company. The very best of building materials were selected and used, and many paint experts who examined the protective coating on steel work, pronounced it the most perfect paint covering ever brought to their notice.

Steel frame constructed buildings require a protective coating that will prevent initial corrosion and prove permanent for years and years. Dixon's Silica-Graphite Paint has made so many records for great durability in its use in different climates, that it is being specified by all

architects, constructing engineers and contractors who desire the very best metal preservative for important and notable buildings.

SPURS.

An exchange says, there was never a horse or a man who wore shoes who did not occasionally require a gentle touch of the spur. It depends on the way the spur is applied as to how willingly the response will be made.

We know of a vice-president and general manager who carries a short piece of bare pencil lead in his breeches pocket. With the aid of this and a yellow pad of paper he manufactures spurs that bring quick response. New men are apt to resent the touch, but later look back and find that they were really benefited by the sharp touching up. By the older man it is received as a friendly reminder that probably without really knowing it he has been napping a little, and he quickly pulls himself together and thanks the man that applied the spur.

RANT ABOUT RAILROADS.

One of the most significant, as well as interesting facts ever furnished by statisties, relates to railroad rates in this and other countries for transporting freight. Great Britain charges \$3.48 for carrying a ton 100 miles:

France	-	-	-	-	\$1.44
Germany	-	-	-	-	1.28
Switzerland	-	-	-	-	2.80
United States	-	-	-	-	.82
Holland	-	-	-	-	1.60
Belgium	-	-	-	-	1.36
Italy	-	-	-	-	3.20
Austria	-	-	-	-	2.00

And yet most of these roads, except those of this country, are owned and run by the governments of the countries named. Every effort now making to put the railroads under government control, before politics are purged, is worse than wasted. There is pollution in almost everything that a certain class of partisan politicians touches. Even the schools are not exempt from their influence.

GRAPHITE GREASE VS. OIL.

The superintendent of motive power of one of the large western railways has been using graphite grease on their main driving rod brasses. He altered their oil cups, which were welded fast to the rod, by boring them out and screw-threading them on the inside, and then making a cap, also screw-threaded, thus forming a compression grease cup.

The superintendent has these grease cups on three compound engines of very large size, of 140 to 150 tons, and finds the grease has worked in a very satisfactory manner.

The engineer on one of these engines states that when he gets ready to go out on his run he gives the cap of the grease cup one turn and pays no further attention to it during the entire run of 165 miles. They have no hot pins, and everything works perfectly. They are changing all of their other engines over from oil to grease as fast as possible.

Graphite

VOL. III.

MAY, 1901.

No. 6.

Issued in the interest of Dixon's Graphite Productions, and for the purpose of establishing a better understanding in regard to the different forms of Graphite and their respective uses.

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GRAPHITE.

BY MALCOLM MCNAUGHTON, M. E.

Reprinted from Stevens Institute Indicator, January, 1901.

The use of graphite in the world's industries is rapidly increasing, not only in the amount and value of material, but also in the number and variety of its applications. Beginning in the middle of the sixteenth century with its use in the manufacture of lead pencils, followed perhaps a century or more later by being used in the manufacture of melting pots, its sphere of usefulness has so broadened that today it occupies a distinct and very important place in the world's industrial scheme.

Before describing its various uses, it may be of interest to present, somewhat briefly, something concerning its names, natural formation, general occurrence, sources and amount of supply. The words "Graphite," "Plumbago," and "Blacklead" are practically synonymous terms, in that they refer to the same chemical substance. The term "Blacklead" was probably the original, and a comparative one, comparative because it indicated the color of the streak made by this substance as compared with that made by metallic lead, evidently in very early use for the purpose of writing or lining on paper. From the word "Blacklead," the word "Plumbago" naturally developed through the Latin. The word "Graphite" is from the Greek; meaning in the original, "I write." Thus it will be seen that all these names have reference to its very earliest use—that of making pencils. While these terms are synonymous, there have come to be certain peculiar applications in their uses—thus, we import "Plumbago" from the island of Ceylon, and "Blacklead" from Germany, Austria and Italy, and, at the same time, we export "Graphite" from this country to all the other countries of the world. There are lead pencils, plumbago crucibles, and graphite lubricants; blacklead stove polish, plumbago foundry facings and graphite paint. This confusion of names may seem to be somewhat misleading at times, but there is considerable method in it.

Graphite may be regarded as occupying the middle place in the carbon trinity—charcoal and the diamond being the

other forms—but it has its own individual characteristics, which make the number of its useful applications much greater than that of either of the others.

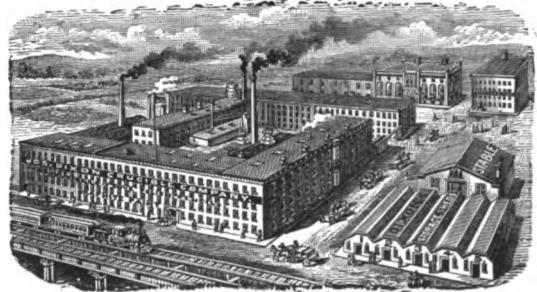
Graphite occurs naturally in two forms—the amorphous and crystalline—and each form being subject to certain variations due to the incidents of its occurrence. The amorphous graphite does not occur pure, but is always associated with other earthy materials, the character of which have great bearing on its use. Crystalline graphite shows great variations also, because of the distortion of its crystals during the process of formation. Crystalline graphite occurs both massive and with its particles disseminated through a containing rock; thus Ceylon graphite occurs in large masses of crystals, while the American formation usually occurs as a small laminated flake disseminated through granitic rocks. These differences are made use of in the proper selection of graphite for its various uses.

At the present time the world's annual production of graphite probably approximates closely to 60,000 tons, and of this amount probably 50 per cent. is of the crystalline variety and the balance of the amorphous form. Of the crystalline graphite, at least 90 per cent. comes from the island of Ceylon, and of the amorphous form, probably the same relative proportion comes from the interior states of Germany and Austria. The remainder is nearly all supplied from the mines of Canada, New York and Mexico. The product of the mines in Ontario, Canada, is very small and quite unimportant, because the uses to which it may be applied are not sufficiently distinctive to give it any special commercial value. On the other hand, the product of the mines near Ticonderoga, in the State of New York, and in Sonora County, Mexico, have qualities which secure for them special applications, and which will be mentioned further on in this article. The localities mentioned furnish practically all of the graphite used, but it must not be understood that graphite is of rare occurrence. It is very widely distributed, and the Annual Report of the United States Geological Survey makes mention of its production in the States of Alabama, Michigan, New York, Pennsylvania and Rhode Island. It has been stated that there is probably as much carbon north of the Mohawk River in the form of graphite as there is south of it in the form of coal, but while its occurrence is so general, it is rarely found so associated as to be available as a source of supply.

The first importation of Ceylon graphite into this country was made in 1829, by Joseph Dixon, of Salem, Mass. Two years previous to this he had experimented with graphite from the State of New Hampshire, as a sub-

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GRAPHITE MINES AND MILLS AT TICONDEROGA, N. Y.
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OFFICERS:

E. F. C. YOUNG, JOHN A. WALKER, GEO. E. LONG,
President. Vice Pres. and Treas. Secretary.

JERSEY CITY, N. J., May 1901.

stitute for German blacklead, or pot-lead, as it was sometimes called, in the manufacture of crucibles. The success of his experiment in this line was so pronounced that he secured a small shipment of Ceylon plumbago, samples of which he had previously seen in the possession of sailors in the New England ports. This was the first use of crystalline graphite in the manufacture of crucibles, which particular branch of the graphite industry now absorbs somewhat more than one-half of the world's output.

The range in the prices of graphite per ton is greater than the range of the quality. The inferior grades of German blacklead sell as low as \$20 per ton in original packages in this market, while during the past two years, choice lots of Ceylon plumbago have sold as high as \$400 per ton, and between these limits, certain grades of the German article have brought higher prices than some of the inferior grades from Ceylon; the percentage of carbon in low grades of German and Austrian blacklead is as low as 40 per cent., while fine grades of Ceylon sometimes run as high as 96 per cent. of carbon. The Ceylon product is imported directly by steamers in packages having net weights of about 600 pounds. This is graded into lump, chip and dust, the first grade consisting of the larger and softer pieces, while the last is much finer, and of course carries the bulk of the earthy impurities; while chip is a grade lying between the two. These grades are again sub-divided according to their brightness or "boldness," as it is called, and softness. About 40 per cent. of the Ceylon product is imported in this country, while England takes a like amount; the remainder being distributed over the continental countries of Europe. The importations of

German blacklead are perhaps not more than one-fourth that of Ceylon plumbago, for the reason that for many of the uses to which this article is put in Europe, Ceylon and American graphite have been substituted here.

The total output of graphite is consumed in something like the proportions indicated in the following table:

Crucibles	-	-	55
Stove Polish	-	-	15
Foundry Facings	-	-	10
Paint	-	-	5
Lubricating	-	-	5
All others	-	-	10

The last item includes graphite for powder glazing, electrotyping, steam packings, and other various and minor uses. Of course, an accurate apportionment on the above lines would be quite impossible, and the figures are given only as an indication of individual opinion.

The various uses to which graphite is put depends on certain physical characteristics which it possesses, none of its uses, except as a foundry facing, involving any chemical reaction. These physical properties are its infusibility at temperatures below that of the electric arc, its great capacity for absorbing and transferring heat, the comparative high electrical conductivity and its "unctuous" softness. The latter expression sounds rather peculiar, but is meant to describe the quality of yielding by contact with other surfaces, and which is the reason for its use in lead pencils, lubrication, powder glazing, stove polishes, etc. It adheres readily to any surface with which it comes in contact, and is highly polished by the slightest friction.

(To be continued.)

CRUCIBLES IN PREHISTORIC TIMES.

BY J. A. W.

Zimbabwe in Mashonaland, which is in Central South Africa, has ruins which show an almost modern acquaintance with the arts. Hinting at even prehistoric times evidence of abundant supplies of gold are reported—and later abundant gold in Arabia and gold in Phoenicia and Tyre was well known. Recent discoveries point to Zimbabwe, South Africa, as the place of its origin.

Iron smelting furnaces are unearthed, a crude blow pipe was found and also the remains of a bellows; and discovered among other reliques was unearthed an ingot mold with patterns of Phoenician fancy gold ornaments, showing they worked for the Phoenician market, and what most interests Graphite is that crucibles were found there and specimens brought away. The excavators found that the gold was crushed and separated by a water process, then put in clay crucibles well closed up and left for a long time in the furnace. Thus we find a connection between Dixon business and the most ancient times—bible days—when Tyre was in its wealth and glory, and even back of that, in prehistoric times. Thus a crucible was ever connected with the advance of civilization, and never more so than in the twentieth century, six or eight thousand years after the early prehistoric workers originated them. To-day the Dixon Crucible is the chosen vessel in which is melted the brass, copper, bronze, aluminum, steel and the precious metals, all of which make modern civilization possible.

A LOCOMOTIVE GRAPHITE LUBRICATOR.

The development of high speed and of high steam pressures in locomotive practice has made the question of successful lubrication more serious than ever before. With increased valve and cylinder areas and increased pressures and speeds there is difficulty in properly lubricating valves and cylinders, especially in bad water districts.

Recourse is frequently had under these conditions to graphite—Dixon's pure flake lubricating graphite for instance. Graphite is the best solid lubricant known. It is not affected by heat or cold, by acids or alkalies; and it

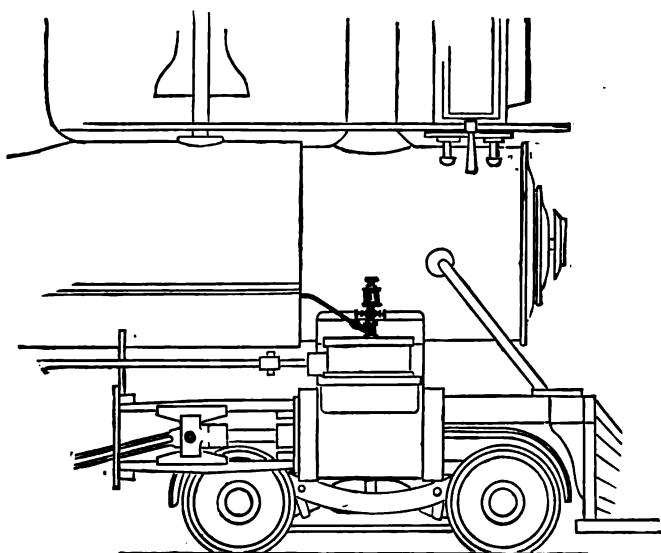


FIGURE 1.—GRAPHITE LUBRICATOR.

greatly increases the life and lubricating value of any oil, tallow or grease to which it is added. But there has always been question as to an effective method of applying it to the surfaces where it is needed.

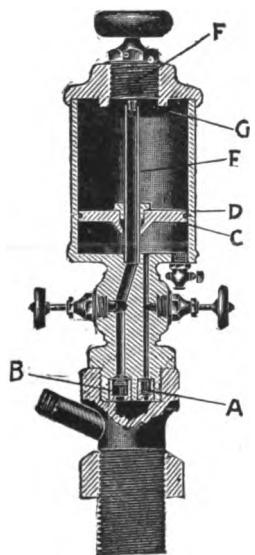


FIGURE 2.—GRAPHITE LUBRICATOR.

To meet the requirements of graphite lubrication, the device shown herewith was designed and developed to its present form in freight service. This lubricator feeds graphite only and is absolutely reliable in its work. In practice a lubricator is placed as shown in figure 1 on each

steam chest, and it does not displace the sight feed oil lubricator in the cab. In figure 2 is shown the internal arrangement of this lubricator. The principal features are the check valves A and B, which check in opposite directions; the piston head C, which has two packing rings D, with fibrous packing around the feed tube E. The piston head C forms the dividing line between the water and the graphite. The graphite is placed in the lubricator through the filling plug F. When the locomotive is working steam, steam enters through the check valve A, which has a very small port, so small in fact that it will just admit the point of a pin. The steam passes upward to the space beneath the piston head, where it is condensed, meanwhile moving the piston head up, thus pressing the graphite between the filling plug F and the top of the feed nozzle G. The graphite remains there until steam is shut off. The steam check valve A seats and retains the pressure, water, under the piston head C. The quantity of graphite immediately above the feed nozzle G is drawn down by suction through the feed tube E and graphite check valve B to the valves and cylinders. This operation is repeated every time the throttle is closed and the locomotive is drifting. It will be observed that the graphite comes in contact with the oil as the latter comes from the oil pipe, and they both pass together to the valves and cylinders.

It is claimed for this device, which has been thoroughly tested in both freight and passenger service, that it effects thorough lubrication of valves and cylinders and thus produces increased mileage for valve oil, coal and water; and that the strain on the valve motion is reduced to a minimum. This device is the invention of Mr. A. D. Homard, of Massillon, O., a locomotive engineer on the Wheeling & Lake Erie.—*Railway Master Mechanic*.

GRAPHITE IN A GAS PLANT.

The superintendent of a Southern gas company writes us that he uses Dixon's Graphite Compound for all steam connections, meter connections and service pipes; that he finds it all that the Dixon Company claims for it; that it is superior to red lead and works well on all meter and union gaskets.

The superintendent of a New England gas company writes us: "We have used Dixon's Graphite Compound for a number of years, and take pleasure in saying that we think it is better than anything we have ever used. We use it mostly on bolt threads that are heated to high temperature, and never had any trouble in removing the nuts after using the Graphite Compound. Before using it we had great trouble in removing nuts without breaking the bolt, and we gladly recommend the Compound for that purpose especially."

"We used Dixon's Silica-Graphite Paint on one of our gas boilers last summer, and consider it the best we ever tried."

LIQUID AIR.

Everybody's Magazine tells us that liquid air is not a new thing at all. It was manufactured nearly fifty years ago, as a laboratory experiment. But the process was that of terrific compression, actually forcing the molecules of

air by main strength to such close quarters that the attraction of each of them for the other held them together as a liquid. The pressure required was tremendous. Molecules may be small things, but their forces are vast. It takes great power to drive them apart if they desire to remain together, and it takes even greater power to press them closer than they care to go. So the first liquid air produced was in quantities to be measured by teaspoonfuls, and it cost something like \$2,000 an ounce.

It was Professor Dewar, of England, who first used the principle of *chilling* the air by the expansion of a part of it already compressed. Chilling the air takes away tremendously from the power of the molecules to resist compression, so Professor Dewar obtained liquid air in gallons, at comparatively a small cost. In this country Charles E. Tripler, by certain improvements in the Dewar process, claims to have produced liquid air at a cost of about twenty cents per gallon.

FOR COASTER BRAKES.

The pleasure of bicycle riding was largely increased when the coaster brake was invented and applied, but the rider who had been used to self-oiling tubes found his pleasure sadly marred by the frequent oiling necessary to keep the coaster brake from squealing and to make it free running. Some of the riders who had found out the good qualities of Dixon's Graphitoleo wanted to use it in the coaster brake, but had difficulty in applying it. To overcome this we have added a nose to the tube so that the contents of the tube can be easily injected into the brake.

Dixon's Graphitoleo is far superior to oil for bicycle use, whether on brakes, chains or bearings.



FAIRLY ANTIQUE.

We find the following in the *Western Painter*:

An Englishman in the presence of an American was boasting about the antiques that the British Museum possessed, says *Answers*. For instance, there is a book that was once owned by Cicero, to say nothing of Egyptian remains dating back as far as 5000 B. C.

"Well, they ain't new, certainly," replied his friend from the U. S. A. "But in the museum in Washington they've got the very same lead-pencil that Noah used to check off the animals with as they went into the ark."

ARIZONA BEATS IT.

In *Graphite* for October, 1900, we showed an illustration of a No. 70 crucible which had taken 34 heats on ear journal brass where the percentage of copper was large and the heat high. We thought it a good average life, even for the celebrated Dixon Crucibles.

The foreman of the Arizona and New Mexico Railroad foundry writes: "I saw a cut of a crucible that had taken 34 heats of brass. Well, I can beat that. I have a No.

300 that I have taken off 37 heats, and two of them were iron, and I could take off several more, but it has a piece out of it. I tried the experiment after reading the article."

GRAPHITE LUBRICATION OF LAUNDRY ROLLS.

We have received the following interesting letter from the General Manager of the Union Laundry Company, at Albany, N. Y.:

ALBANY, N. Y., Jan. 28, 1901.

Joseph Dixon Crucible Co.

GENTLEMEN:—We beg to acknowledge the receipt of your favor of January 25th in regard to Dixon's No. 3 Graphite Grease for rolls.

We find the grease satisfactory in every way for the purpose for which we use it; that is for lubricating hot or heated rolls, whether heated by steam or gas. We apply it to rolls whenever possible in brass lubricating cups adjusted to admit the proper amount when heated.

We find it economical to use, also little trouble or annoyance from spattering, a condition much desired for laundry purposes. Very truly yours,

GRANT NEWCOMB, Gen'l Mgr.

THE MAN OF THE HOUR.

The man that does not make a show
Of energy, nerve and grit,
And fails to buy the goods "that go"
Will surely get there—NIT.—*Max Leserman*.

A DOUBLY PLEASING TESTIMONIAL.

Mr. R. G. Hunt, Secretary and Treasurer of the Fort Smith and Van Buren Light and Transit Co., Fort Smith, Ark., has an exceedingly neat way of doing things. We have just received the following: "Please ship us by express 10 pounds of Dixon's Pipe-Joint Compound, we have found this to be the best thing yet tried for gas work, and we will take pleasure in indorsing it to any when you may refer to us."

Mr. Hunt will please accept our sincere thanks. We may add that some months ago when we sent out circulars to all the superintendents of gas companies relative to Dixon's Graphite Compound, we received many pleasing replies and quite a large number of orders, although the circulars did not solicit orders. Verily, the electric and gas companies have a lot of good fellows among them.

STOCKHOLDERS' MEETING AND ELECTION OF OFFICERS.

The annual meeting of the stockholders of the Joseph Dixon Crucible Company was held at the Company's main office, Jersey City, N. J., Monday, April 15, and out of a possible vote of 7345 shares, there were 7285 shares voted for the re-election of the old Board, consisting of Edward F. C. Young, John A. Walker, Daniel T. Hoag, Richard Butler, William Murray, Edward L. Young, and Joseph T. Bedle. President E. F. C. Young; Vice Pres't and Treasurer John A. Walker; Secretary George E. Long were re-elected by the Directors. Judge Joseph E. Bedle was also re-elected as Counsel.

Graphite

VOL. III.

JUNE, 1901.

No. 7.

Issued in the interest of Dixon's Graphite Productions, and for the purpose of establishing a better understanding in regard to the different forms of Graphite and their respective uses.

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GRAPHITE.

BY MALCOLM MCNAUGHTON, M. E.

Reprinted from Stevens Institute Indicator, January, 1901.

(*Begun in May Graphite.*)

The use of graphite in the manufacture of lead pencils is the oldest, and is now its most common one. The use of the lead pencil itself is universal. The first lead pencils were made from blacklead mined near Barrowdale, Cumberland County, England, and the first mention of these pencils occurs in Conrad Gessner's work on Fossils, dated 1565. The method of manufacture was to cut strips of blacklead out of larger pieces of mineral and insert them in grooves cut in small bars of wood. The product of this mine became extremely valuable, and it is stated that at one time its product sold for as much as thirty shillings per pound, this being

not far from the present price of silver. Royal acts were promulgated, making robbery of blacklead pits a felony; and military escorts were furnished for the carts on their way from the mines to the shops.

This method of manufacture continued until Conté, of Paris, in 1795, devised the method of manufacture which is now universally followed. In this process the graphite and the clay are ground to the finest possible state of division, mixed together, and filtered and caked by hydraulic filters, and then again mixed by repeated forcing through plates perforated by many minute holes. It is then placed in hydraulic presses and forced through dies into the shape and size required. As it issues from the press, it resembles nothing more strongly than a long, round, black cord. It is laid out straight on boards, and when dry it is cut up into proper lengths. It is then packed into plumbago crucibles and fired in kilns.

Red cedar is the wood most universally employed in pencil making, although poplar is sometimes used for cheaper grades, and for slate pencils. The cedar logs are sawed up in small slabs of the proper length for a pencil, and of a sufficient width for four, five or six pencils. This is grooved lengthwise, the groove being exactly the diameter of the lead which it is to receive. The leads are laid in the grooves and another similar block is glued firmly to it. The resulting slab is then run through shaping machines,

which cut each individual pencil from the larger block. The pencils are then ready for the further operations of varnishing, polishing, stamping, etc. The grades of hardness of pencils are dependent upon the relative percentage of clay contained in the mixture, the larger the amount of clay, the harder the grade. Colored and slate pencils are made much in the same manner, other pigments being substituted for the blacklead.

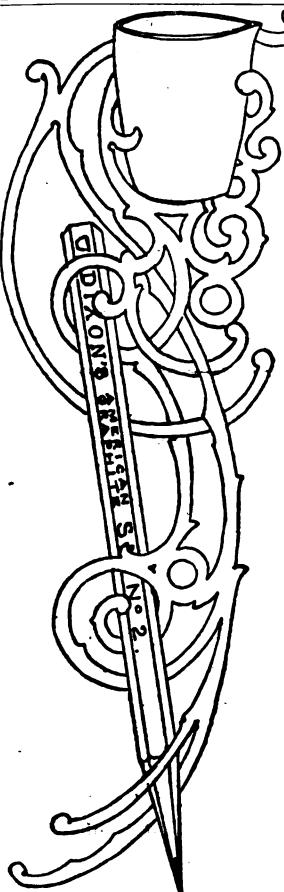
The lead used in the manufacture of lead pencils is of the amorphous form, and is supplied principally from the mines of Austria and Mexico; the latter product having only recently come into the market for this purpose, but seems to be rapidly taking the place of that from other sources. The pencil making industry, although not using very great quantities of blacklead, is a very considerable one; probably 15,000 people being employed in the industry in this country, Germany and Austria.

As previously stated, the manufacture of graphite crucibles absorbs more of the world's graphite product than all the other uses combined. In this country, the crystalline variety, mostly from the island of Ceylon, is used exclusively in the manufacture of crucibles. On the European Continent, German and Austrian blacklead is largely used for this purpose, sometimes without any admixture, but also in connection with the crystalline form, in varying proportions.

The use of plumbago in the manufacture of steel melting crucibles in England is rapidly increasing, notwithstanding the fact that the easily available supplies of good materials are extremely favorable to the manufacture of crucibles from clay.

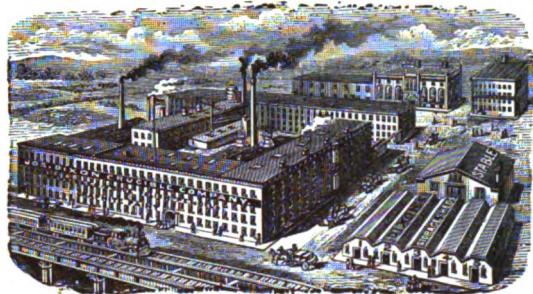
Clay crucibles for steel melting ordinarily last one heat; plumbago crucibles for the same purpose average from five to eight heats. The difference is still greater when we consider their use for melting copper and composition metals; plumbago crucibles oftentimes running as many as forty to fifty heats in crucibles of moderate size, say 150 pounds capacity.

In a general way the manufacture of crucibles is as follows: the components of the mixture, in a plastic condition, are thrown in a revolving mould, the interior of the mould having the contour of the outside of the crucible; a rib having its forming edge the shape of the inside of the crucible and attached to the end of a lever, is drawn down inside of the revolving mould forcing the plastic mass into the desired shape. The crucibles are afterwards dried thoroughly, this operation requiring from one to six weeks, depend-



ESTABLISHED 1827.

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President. *Vice Pres. and Treas.* *Secretary.*

JERSEY CITY, N. J., June 1901.

ing on their size and thickness of walls. They are then set in kilns and burned, the temperature of the kilns being sufficient to thoroughly calcine the clay. The crucibles are now ready for use, the precaution being taken immediately before use to anneal them sufficiently to drive off any hydroscopic moisture that may have been acquired during shipment or storage.

The actual function which plumbago serves in a crucible is somewhat obscure, but the principal one is that of its capacity to absorb and transfer heat. It is also infusible at temperatures short of that of the electric arc. The plumbago crucible is remarkable for its ability to withstand great shock, due to sudden changes of temperature. The crucible at white heat may be thrown into cold water without any apparent damage. Of course, this is an extremely severe test, and if maintained would eventually result in injury to the crucible. Crucibles, when well made, give way through the actual wearing out, that is, repeated formation of slag on the outside of the crucible during successive heats, gradually reduces the thickness of the walls until they become too thin to carry the weight of the metal put in them.

Crucibles of various forms are used for various special purposes, one of the latest improvements in processes being that of liquid brazing as applied to the manufacture of frames for bicycles, automobiles, etc. A crucible, rectangular in plan, the bottom sloping from the ends to a depth of eight to ten inches at the middle, is set in a brick furnace, so that the top of the crucible is about flush with the top of the furnace. Spelter is melted in the crucible and covered with a fluxing agent. The frame to be brazed is

dipped into the molten metal for a minute or more, until the spelter has had time to run into the furthest crevices of the joint. Previous to immersion, the parts of the frame near the joint are coated with a mixture of graphite with some quick drying varnish like shellac. This coating prevents the adhesion of the spelter to the surfaces so protected.

Square and rectangular crucibles are also used for carbonization of electric light filaments and for brazing purposes. Trays for blueing and tempering screws and small machine parts, steel ladle stoppers and nozzles, and retorts for the distillation of lead and zinc, are also made from the same materials as the crucibles.

The practice of facing moulds in which castings are to be made with some carbonaceous material, is general. The material used is usually anthracite, charcoal, or graphite. The reason for its use is for the purpose of preventing the adhesion of the iron to the sand of which the mould is made. The principle of its use for this purpose is as follows: The air contained in the mould, and which is carried in by the stream of molten metal, furnishes oxygen for the combustion of the carbon material of which the facing is composed, so that a condition obtains analogous to that of the spheroidal condition of a drop of water on a hot surface; thus the iron is effectually prevented from coming in actual contact with the sand, so that when the casting is removed, it will be found to be covered with a thin crust which will easily peel off, leaving the iron smooth and clean. In order to secure perfect results, certain conditions must prevail.

First, the facing must adhere perfectly to the mould surfaces. The hot metal coming in contact with the sand, dries it out, and if the facing has not been properly compounded, it will be washed away in front of the advancing metal—so it is necessary to have a certain percentage of clayey material mixed with the facing to prevent its “running” before the metal.

Second, it must be slowly combustible. If the facing burns quickly, trouble is likely to ensue from two causes:

(a) too great volume of gas to be readily vented, this causing “blows” and “cold shuts”; the latter term being applied to those cases where the iron has not filled the mould,

(b) where combustion is too rapid, it is not likely to endure during the entire time that the metal is in the fluid condition, so that while at first the spheroidal condition exists, it ceases before the metal is solidified—thus giving every opportunity for adhesion.

Castings which have been made in connection with the use of a facing well suited to the particular case are superior because of a finer surface texture, of ease of cleaning and less tendency to dull the cutting edges of machine tools. Plumbago is the one material which combines in a greater degree than any of the others, the requisites which are necessary to a good facing. It contains no volatile matter whatever, it burns evenly and slowly, so that a less quantity may be used. It has in addition another quality, that of ability to be sleeked or polished, giving the very smoothest surface to the mould.

It is probable that to the mechanically inclined mind, graphite's most interesting phase is its use as a lubricant. This use is a comparatively new one, very little of it having

been used for this purpose earlier than twenty-five years ago. Much has been claimed for this substance as a lubricant, without pointing out the manner in which it operates. The crystalline graphite is the only form suitable for lubricating purposes, because the amorphous form is always associated with impurities, so that when it is finely ground, the particles are liable to become massed together. The crystalline graphite on the other hand will not become compacted in this way. While any pure, soft, crystalline graphite is valuable for lubricating purposes, the laminated form is specially adapted for this purpose.

(To be continued.)

A PLEASING TESTIMONIAL.

Mr. W. H. Goodwin, Chief Engineer of Lancaster Mills, Clinton, Mass., writes us as follows concerning Dixon's pure flake lubricating graphite:

"I am more than pleased with Dixon's No. 2 fine flake graphite which I have received from you. I have always used the No. 1 in my oil pumps on my low-pressure cylinders, but as the flakes were large it clogged the pump; but with the No. 2 there is no trouble, I can work the No. 2 through my lubricators. I have two low-pressure cylinders, one is 64 x 60, the other 56 x 60. By using Dixon's graphite and starting the engines from the first time they were turned over, I can say that my cylinders are as smooth as glass."

GRAPHITE FOR DYNAMO BEARINGS.

Mr. R. O. Bogart, electrician, of Northport, N. Y., writes us: "I have just had a striking demonstration of the value of Dixon's pure flake graphite. One of the bearings of a dynamo running 1800 revolutions per minute got dry, cut badly and heated. I scraped the bearing and smoothed the journal. I started up and after five minutes it commenced to heat, although the machine has ring oiling bearings and is well supplied with oil. I then commenced to feed a little of Dixon's pure flake graphite to the bearing and it cooled off at once, and I have had no further trouble with it since."

OUR PUBLICATION.

In December, 1898, when we began the publication of *Graphite*, we stated that it was issued in the interest of Dixon's graphite productions, and for the purpose of establishing a better understanding in regard to the different forms of graphite and their respective uses. We were congratulated on our enterprise, but the question was raised, even by some of our own people, if we could keep it up, that is, if we could find enough to say on the subject of graphite. As a matter of fact we have more things to say than we have room in our paper. Many of the things we tell about graphite could well bear repeating—in order to drive the matter home, as it were.

GRAPHITE AS A LUBRICANT FOR HYDRAULIC CYLINDERS.

Mr. James A. Hope, chief engineer of the Brooklyn Real Estate Exchange, says: "For the past four years I have used Dixon's pure flake graphite for lubricating hydraulic

cylinders in place of oil, which was formerly used. The condition of the cylinders has improved so much that while we had to pack the machines every four months before using Dixon's graphite, the last run was for sixteen months, and the condition of the packing showed they did not even need it then.

"The graphite is put into the discharge tank and circulates with the runner. I consider Dixon's graphite the best lubricant made for hydraulic elevators."

THE SPREADING POWER OF PURE FLAKE GRAPHITE.

An engineering expert sometime ago found, by experimenting, that a Dixon American Graphite pencil contained sufficient graphite to make a mark fifteen miles long. A further proof of the covering or spreading power of graphite is shown in the following statement made by the well known powder manufacturers, Mess. Rand & Co.:

"We have glazed, under proper conditions, one ton of powder with a teaspoonful of Dixon's best graphite. Of course, you understand this is not an every-day occurrence, and in order to do this the powder would have to be at its best and caught at the right time, and run longer than it takes ordinarily. But the above is the result of experiments which we have had at our mills."

POINTS ON PAINT OF INTEREST TO SCHOOL DIRECTORS.

One of the strongest financial and trust institutions in the country, conceded to be under the most skillful and up-to-date management, recently placed a contract for painting the tin roofs of fourteen hundred buildings in Philadelphia. The paint specified was Dixon's Silica-Graphite Paint, and this paint was selected because one of their clients stated to them that one coat of this paint had lasted on his roof for seven years and was still in good condition. Upon investigation they had little difficulty in confirming this statement and reinforcing it by a large number of other instances, some of which showed even better results.

The above mentioned company was aware that the greatest cost in painting is the cost for labor, and perceived that the paint that would for the longest time put off the necessity of repainting, is the cheapest in the end. Dixon's Silica-Graphite Paint is the most economical paint in the market for roofs, fences, iron railings, cornices and general out-door work.

The proper maintenance of school buildings is one of the chief items of expense with which school boards have to contend, and here is an excellent opportunity to materially reduce this expense.

There are the best scientific and practical reasons for the long life of Dixon's Silica-Graphite Paint, which are given in detail in a series of special circulars of information, and we will be glad to mail these circulars to any school director who may be interested.

"Do you sell on easy terms?"

"Yes, if you pay on easy terms." —*Hardware*.

MISTAKES VS. CARELESSNESS.

Manufacturers, jobbers and wholesale concerns generally, who employ salesmen and clerks, very soon begin to size-up the worth of a man or boy by the nature of his errors.

There is a marked difference, which many overlook, between an error due to the act of taking something to be other than it is, or due to ignorance, miscalculation or misconception; and an error due to carelessness, neglectfulness of responsibility or duty. Errors due to carelessness are traceable to unconcern and indifference—to inattention to what one is about, and general heedlessness.

The successful and careful business man can find no excuses for errors due to carelessness.

The salesman or clerk who is careless, heedless and indifferent, and his work shows it whether he is aware of it or not, and does not mend his ways early in life, will never rise above commonplace ability or condition.

GRAPHITE FOR ENGINE SLIDES.

A gentleman in Providence, R. I., writes as follows concerning the use of graphite for automobiles:

"I have already given Dixon's Graphite Pipe-Joint Compound quite a test and found it exceedingly satisfactory. I have taken the opportunity to recommend it to the Columbia Sales Department here in Providence for their automobile repair shop. I am also using Dixon's Finely Pulverized Flake Graphite, No. 635, mixed with cylinder oil in a sight-feed lubricator and mixed with engine oil for all parts of my steam carriage needing lubrication, and think it is just what I have been looking for.

"I would call your attention to the fact that most steam carriages, notably 'Locomobiles' and 'Mobiles,' have vertical engine slides with absolutely no provision made for lubrication, excepting the occasional dropping of oil on them from an oil can. The vertical position of the slides and the motion of the cross-head together tend to work all the oil off the slide on to the ground in a very few revolutions of the engine, so that the slides practically run dry all the time. This mechanical fault of construction will be largely remedied by the use of graphite mixed with engine oil. I expect that part of the graphite will be retained on the slides after all the oil has dropped on the ground."

As flake graphite has a mechanical affinity for metal surfaces, there is probably no doubt that the expectations of the writer of the above will be fulfilled. We may add that any one interested in this subject can easily make a test for himself, as the Joseph Dixon Crucible Co., of Jersey City, N. J., will gladly send suitable samples to any one interested.—*Automobile Magazine*.

We may add the following from a gentleman connected with an automobile company:

"I have found out in the last few days, since using the graphite, that 100 lbs. of steam does as much work as 160 lbs. with plain oil, and that noise of machinery is practically eliminated. This being the case, I am just a little enthusiastic and want to follow the thing up till I get the best possible results. What we want is the lubricant which will best do the work, and will run us the greatest number of miles at the least expense."

I've been studyin' on a question
For nigh on forty years;
I've worked at it with winnin' smiles,
I've worked through streamin' tears.

The East, the West, the North, the South
This puzzle all possess;
I've 'bout gi'n up a tryin'
The measley thing to guess.

To-day a fellow told me
The answer I'd have right,
If I'd just ask the feller
Who edits that *Graphite*;
So I'm writin' you this letter,
An' I'll try to make it plain
What this here thing comprises
That's a troublin' of my brain.

You watch a little duffer
No bigger than three years,
Or, when he's got still bigger—
A man—in hopes and fears;
Or, take a little angel
All dimples, smiles and curls,
An' watch her till she grows to be
One of those great big girls—

Yes, let 'em grow till streaks of gray
Wriggle through their hair—
And still the habit's with 'em,
Till they climb the Golden Stair—

Why is it, Mr. Editor,
When most folks go to write
With the very best lead pencil,
Dixon's Best Graphite,
They always stick it in their mouths,
And ruin the best of "lead,"
From the time they leave the cradle
Until—well, till they're dead? .

I've studied on this problem
An' hate to give up beat;
An' sometimes think the 'tarnal fools
Think graphite's good to eat.
Now, if it is, I want to know;
Its uses are so great—
I'll abide by your decision.
Please hurry. I can't wait.

—C. M. H.

THE ENGLISH LANGUAGE.

Dixon goods sell in every quarter of the globe. There is scarcely a steamer or clipper leaving our ports without one or more Dixon shipments for foreign climes. One remarkable thing is that the correspondence, wherever the writer is located, is invariably written in good English.

Two letters to-day, one signed Ardesir Byramji and the other Sorabjee Shapurjee & Co., mention their wants in a first-class English style. English has slowly but surely superseded every other tongue for business purposes.—W.

Graphite

VOL. III.

JULY, 1901.

No. 8.

Issued in the interest of Dixon's Graphite Productions, and for the purpose of establishing a better understanding in regard to the different forms of Graphite and their respective uses.

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GRAPHITE.

BY MALCOLM MCNAUGHTON, M. E.

Reprinted from Stevens Institute Indicator, January, 1901.

(*Begun in May Graphite.*)

It should be understood that the true function of graphite as a lubricant is to change the character of solid friction, the co-efficient of friction of iron on iron being changed to that of iron on graphite, which may be safely taken at not more than 60 per cent. of the former. As was said before, the laminated form is the one most suitable for lubricating purposes, because it adheres most closely to any surfaces with which it comes in contact. The laminated or flake form, as it is prepared for market, is irregularly circular in shape, having an average diameter of 1/40-inch. The thickness of these flakes varies from

1/500-inch to a thickness too little to be accurately determined by a micrometer caliper, certainly less than 1/4000-inch. It may readily be imagined how closely these thin flakes become attached to friction surfaces.

Graphite must not be considered as a substitute for oils or greases as a lubricant. It would be foolish to claim that any solid friction could be as low as that of the fluid friction of mineral lubricating oils or greases, but there are many cases where the latter fail and innumerable others where the admixture of graphite is of the very greatest benefit.

As with all good things, discretion must be used in its use, the greatest source of error being in using it in too large quantities. The broad, flat flakes will stand a very great amount of wear before being destroyed. It will be readily understood that graphite may not be used in connection with oil, where the operation of the oiling device is based in the capillary principle, because the graphite will clog the tubes and so entirely suspend all lubrication.

One of the valuable features of the use of graphite for lubricating purposes is the fact that a bearing so lubricated is not liable to set while running hot. The oil may burn out, but the graphite comes into play and effectually prevents adhesion of the frictional surfaces.

It has quite a number of special uses, such as in air cylinders of blowing cylinders, on type-setting machines,

lace machinery, where oil stains are to be avoided, on piano and organ actions, and many other places where the use of oil is to be avoided for various reasons.

Perhaps no more striking illustration of the excellent lubricating qualities of this material can be mentioned than that concerning its effect on tile roofs, located near the sorting compounds in Ceylon. These tiles are of the simplest kind, having no locking device, and laid at an angle less than that of repose. The winds carry the dust from the plumbago compounds and drive it into the crevices of the tile roofs, and so change the angle of friction that without warning the roof comes sliding down.

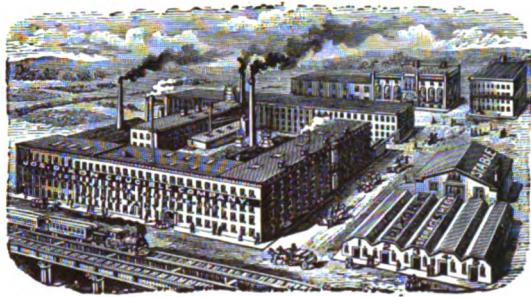
The use of graphite for lubricating purposes is worthy the consideration of any who have any such problems to solve.

Another and exceedingly important use to which graphite is applied is in the process of electrotyping, in which it serves a double purpose. The process of electrotyping as applied to the art of printing consists of making in wax an impression of the type form or half tone cut or engraving, and then depositing copper thereon. In the first place, graphite is used on the face of the wax case to prevent adhesion of the type form. For this purpose it must be very fine and of such a character that it will not pack together in masses, thus causing minute blotches on the mold. Its second function is in supplying a conductive coating to the surface of the mould. This is done by highly polishing the surface with graphite by means of very fine hand brushes. For this purpose the graphite should be of the greatest purity and fineness. When a case so prepared is immersed in the electro-plating vat, a deposit of copper begins to form at the connecting points and extends over the whole surface, which has been polished with the graphite. This may take from twenty to forty minutes. In some cases where the finest results are not wanted and where time is to be saved, a chemical deposit of copper is first thrown down on the form. This is done by means of a solution of sulphate of copper poured over pure iron filings on the surface of the mould. Copper is liberated and deposited on the surface, but only where there is a graphite coating. Such a coating reduces the time required to deposit the coating in the electro-plating vat, but the quality of the electro-type so made is not so good. Many attempts have been made to supply a substitute for graphite in this process, but nothing has yet been found to answer.

Considerable quantities of crystalline graphite are used for the purpose of glazing gunpowder, in order to prevent

ESTABLISHED 1827.

INCORPORATED 1868.



JOSEPH DIXON CRUCIBLE CO. JERSEY CITY, N. J., U. S. A.

SALESROOMS AT

**68 Reade St., New-York. 1020 Arch St., Philadelphia.
304 Market St., San Francisco. 28 Victoria St., London.**

RESIDENT REPRESENTATIVES :

**BOSTON. CHICAGO. ST. LOUIS. PITTSBURG.
PARIS. HAMBURG. VIENNA.**

**GRAPHITE MINES AND MILLS AT TICONDEROGA, N. Y.
CEDAR MILLS AT CRYSTAL RIVER, FLA.**

OFFICERS:

**E. F. C. YOUNG, JOHN A. WALKER, GEO. E. LONG,
President Vice Pres. and Treas. Secretary.**

JERSEY CITY, N. J., July 1901.

absorption of moisture and consequent caking. This operation is conducted by means of a large tumbling barrel, the powder and graphite being tumbled together for a number of hours until the right polish has been secured.

Stove-polish is one of the common articles in which graphite is used in large quantities. All varieties are used for this purpose, the amorphous blacklead from Germany in the largest quantities. The polish consists of two components, the graphite which imparts the polish, and the clay binding material which holds it in place. The German blacklead can be used without any admixture, but the addition of crystalline graphite gives a more brilliant but grayer lustre, far more enduring and obtained with much less labor.

During the past decade the use of carbon as a paint pigment has steadily increased, and the form of carbon now most usually employed for this purpose is graphite. Every one is familiar with the great durability of paint made from lamp-black and linseed oil, and also with the very great disadvantage in its use, that of extremely slow drying. Paints made with graphite as a pigment seem to have all the durability of the lamp-black paint, with the advantage of drying in a reasonable time without the addition of dryers. As a paint pigment graphite is absolutely inert, producing no injurious effect whatever on the oil, and not subject to any change as the result of any exterior conditions. One of the peculiarities of graphite paint is the extreme ease with which it may be worked out under the brush. This is due to the same quality which makes it a good lubricant. The workman finds himself spreading it out properly in spite of himself—it being

actually easier to spread it out than to apply heavy coats. And for the same reason, it is possible to use a larger volume of graphite than of other heavier pigments, without materially reducing the spreading capacity of the paint. Amorphous graphite is not so suitable for paint purposes as the crystalline form, because of the earthy impurities, largely of clayey material, which it carries. Of the crystalline varieties, the laminated is superior, for the reason that the surface of the oil exposed to destructive influences is least when this form is used. The action of the brush in spreading the paint causes the flakes to lie in their most natural position, flat and overlapping each other, so that only the edge of the oil film is exposed.

Crystalline graphite is used for polishing the bottoms of racing craft, and more than once has been brought into requisition in preparing quite large steamers for their speed trials.

Graphite is also used to furnish body for the dye to hold to, in the manufacture of felt hats. The amorphous form is used for this purpose.

A close examination of an incandescent electric lamp will reveal two small black lumps of graphite at the point where the filament joins the platinum wires. A certain kind of amorphous graphite, ground into a fine powder and made into a paste, is applied to this connection and baked hard.

Rods, plates and pieces of various forms, and having very great range of electrical resistance are made from mixtures of graphite with some non-conducting binder. Thus two pieces of the same size may have conductivities in the ratio of 1 to 100,000.

This material is used as a substitute for wire where high resistance is desired in a limited space.

The last use of graphite to be mentioned, is that of a substitute for red-lead for use on threaded joints, gaskets, etc. Its advantages for this particular purpose are that the mixture never sets hard as red-lead does, and joints may be readily opened, even years after they have been put together. And also, due to the lubricating quality of the graphite, pipes may be screwed up at least a half turn more on the average.

In conclusion, mention should be made of the method for the artificial production of graphite devised by A. G. Acheson, of Niagara Falls. The process consists of the production of carborundum in the electric furnace, and then by prolonged heating, it is decomposed and carbon set free as graphite. This form of graphite has the gray color and lustre of the crystalline form, but lacks its smoothness and softness when pulverized, probably due to the fact that the transformation has not been complete. This process is used successfully for the graphitization of electrodes and brushes, first formed in the ordinary way from coke with such other materials added as are necessary for the production of carborundum. The durability and efficiency of electrodes are greatly increased by this treatment. The uses of this form of graphite other than as above mentioned, have not yet been demonstrated. The quality of the product at the present time does not equal that of the natural crystalline form for the purposes for which it is usually employed.

THE WAYS OF MEN.

The pessimistic boarder frowned
Because his piece of pie was small;
The optimistic boarder smiled
To think they'd any pie at all.
—*Chicago Times-Herald.*

EDISON'S NEW STORAGE BATTERY.

Dixon's Pure Flake Graphite Used in Its Manufacture.

We believe we violate no confidence in stating that Dixon's Pure Flake Graphite forms one of the materials in Edison's new storage battery, which is attracting such marked attention throughout the world. The manner in which the graphite is used is explained by Mr. Edison to a reporter as follows:

"The construction of one cell is as follows: In a steel sheet a number of holes are punched—twenty-four, in fact, and in each one is placed a steel box, thin and perforated with minute holes. The active material is made in the form of briquettes, and is contained in these little steel boxes. The briquettes are condensed under a pressure of one hundred tons, which insures their being absolutely rigid.

"The positive briquette are composed of a finely divided compound of iron obtained by a special chemical process, mixed with an equal portion of graphite. The graphite does not enter into any of the chemical processes, it simply assists the chemical conductivity.

"The negative briquette is obtained by similarly mixing finely divided nickel, also obtained by a secret process, with an equal bulk of graphite. This is solidified in the little steel boxes as in the case of the iron. These two plates, one containing twenty-four of the iron and graphite boxes, and the other twenty-four of the nickel and graphite boxes, constitute one cell of the battery.

"Of course, there can be as many of these cells as the experimenter desires to use. The two plates are placed in a vessel containing the potash solution, and the primary cell is complete."

AS BIG AS A BARREL.

Many frequently say: "As big as a barrel", but how many can really tell how big a barrel is? For those who would like to know we will say that the dimensions of a barrel are as follows:

Diameter of head, 17 inches; diameter at bung, 19 inches; length, 28 inches; volume, 7689 cubic inches—3.5756 bushels.

THE BOSS SURPRISED.

An engineer in writing us says:

"I always find pleasure in recommending a good article and Dixon's pure flake graphite is one of the best.

"Some time ago I was called on to run a large Corliss engine, and the third day in starting up after dinner the main bearing heated up and became smoking hot before it got up to speed. The owner said he knew from experience that the only thing to do was to have the boxes taken out and have them scraped. This would have taken several days. To his surprise and the employees', who were expect-

ing to be laid off, I had the plant running in one hour. Dixon's pure flake graphite and cylinder oil did it".

EXCHANGE.

One of our customers sends us the following letter:—
"THE JOSEPH DIXON CRUCIBLE COMPANY,
Jersey City, N. J.

DEAR SIRS:—We to-day paid your one-day sight draft of \$28.47. There was an exchange on this of 15c. We would say we do not care to pay exchange; we cannot collect it and don't have to pay it to others, and we don't see that we ought to make an exception in your case.

Kindly bear this in mind in the future and oblige,
Yours truly, —W

The above is contrary to the rules of business wherever practiced.

Theoretically and justly the seller is entitled to receive pay in money current in his own territory, and if it costs 15 cents to get \$28.47 from buyer to seller, the buyer should pay it. If buyer does not pay it, he doesn't pay one hundred cents on the dollar.

HOW IS THIS?

A strange compliment comes to us from the West. It seems a dealer there bought a quantity of Dixon pencils, and did not repeat the order. We wrote him asking why, etc.; in reply he tells us that he bought those pencils so that the leads in the center of the pencils might be pushed out, and the wood part of the pencil used as a pipe stem, but that the leads were fixed so firmly in the Dixon pencils, and stuck so fast to the wood that he could not use them in his business, and that he was very sorry, for he would like to trade with us, but he would have to place his orders with some other pencil concern.

THIS is how a Chinese writer describes New Zealanders in a Chinese paper: "They live months without eating a mouthful of rice; they eat bullocks and sheep in enormous quantities, with knives and prongs. They never enjoy themselves by sitting quietly on their ancestor's graves, but jump around and kick balls as if paid for it, and they have no dignity, for they may be found walking with women."

SORE POINTS.

The pencil heaved a weary sigh,
And murmured to the pen,
"I haven't felt so out of sorts
Since—oh, I don't know when!
"The penknife treats me very ill,
It cuts me in the street,
And really is extremely sharp
Whene'er we chance to meet.
"And when I broke the other day
Beneath its bitter stroke,
It said 'it didn't see the point,'
Neither did I the joke!
"With many troubles I'm depressed,
My heart just feels like lead."
The pen mopped up an inky tear—
"I weep for you," it said.

LIGHT ON LUBRICATION.

The ordinary ball bearings throughout the motor tricycle, of course, merely require the same oil and attention that those on an ordinary cycle should have, says a rider, although the axle bearings should, I think, be oiled more often than they usually are, especially those warmed by the motor.

For the pinions in the aluminum box I find nothing better than pure flaked graphite, with occasionally a little oil or grease, but there is always a certain amount of oil working through from the engine, which in itself renders the powder into a paste. And I am sure that a stiff paste reduces wear and noise more than one which is more like a liquid, and it certainly is less likely to leak out and make a black mess of all the parts adjacent. The chain is best cleaned and lubricated with a stiff brush, vigorously worked into the links with paraffine and graphite.—*The Bicycling World.*

CHINESE LEAD PENCILS.

"For ways that are dark and tricks that are vain the heathen Chinee is peculiar." One of his latest tricks is to prepare imitations of goods which he finds in demand and sell them for genuine. A foreign agent in Shanghai recently sent home to a friend a package containing a lot of these Chinese counterfeits. Among the lot was a packet of what looked exactly like ordinary lead pencils, with the name of a well-known maker stamped in gilt at one end. They were simply round sticks stained black. Of course, such brazen frauds are not sold in the established shops. They are handled by native peddlers, who work them off in large quantities on foreigners who are purchasing supplies.—*Stationer and Printer.*

A FEW INTERESTING ENDORSEMENTS.

CANTON, O., March 17, 1897.

Joseph Dixon Crucible Co.

GENTLEMEN:—When we painted the metal work in our factory in the summer of 1892, we used Dixon's Silica-Graphite Paint, and we do not find even at this date that the metal work needs any repainting, it being still in good condition.

Yours truly,

WROUGHT IRON BRIDGE CO.,

E. J. LANDOR, Pres. and Ch. Engr.

AKRON, O., Sept. 23, 1896.

Joseph Dixon Crucible Co.

GENTLEMEN:—In the Fall of 1890 we painted the iron roof of our generator house with your Silica-Graphite Paint, and it is still well covered and sound, although exposed to fumes from sewer pipe kilns near by.

Yours truly,

THE AKRON GAS CO.,

F. W. LITTLE, Vice-Pres.

PITTSFIELD, MASS., June 30, 1893.

Joseph Dixon Crucible Co.

GENTLEMEN:—Relating to Dixon's Silica-Graphite

44,660 MILES!!

This is IT

Mr. Joseph R. Hice, 2128 North 21st St., Philadelphia, Pa., ran his Pedaling Wagon through the State of Ohio for seven years, on an average of 3 pounds of Dixon's Everlasting Axle Grease per year. His average has been 290 running days each year, and 22 miles each day, making a total of 44,660 miles. When he had a new wagon made, the maker advised him to use the old axles again, the spindles were so true and in such fine condition.

DIXON'S
Graphite Axle Grease

is equally valuable for the light buggy, family carriage or loaded team. It never gums. Will not harden in cold or run off in hot weather. Keeps axles from rusting. It outlasts other greases and oils many times. For sale everywhere.

JOSEPH DIXON CRUCIBLE CO., Jersey City, N. J.

Smoke-Stack and Boiler Front Paint purchased of you in March, 1892, we have not ordered more for the reason that our foundry cupola is in such good condition that it does not require repainting this year. The cupola was painted with the above named paint in the summer of 1892, but from its present appearance it looks as though it was not over one month ago. We consider your paint for such purposes the best and most economical we have ever used.

Yours truly,

E. D. JONES & SONS CO.,
Paper Mill and Machinery.

LOST CREEK, PA.

Joseph Dixon Crucible Co.

GENTLEMEN:—Dixon's Silica-Graphite Paint, which was used to paint a boiler-house roof and iron-work therein, proves very satisfactory. We have put on three coats altogether, and find it stands the acid-gases and steam. The roof inside, when brushed off, shows a clear, bright black surface. It is the only iron roof paint I have found to stand the fumes from the fires and escaping steam.

COLONEL D. P. BROWN,

Superintendent Packer Collieries,
LEHIGH VALLEY COAL CO.

The clerk who's content with a fairly good berth,
And doesn't attempt to gain knowledge and worth,
And grow and win fame in the business strife,—
He'll work for his office-boy later in life.

—Commerce, Accounts and Finance.

COATING the inside of steam boilers with graphite, is recommended by the *Brunner Monat. fuer Textile-Ind.*, as an excellent means of preventing the formation of scale without injury to the boiler.—*Textile World.*

Graphite

VOL. III.

AUGUST, 1901.

No. 9.

Issued in the interest of Dixon's Graphite Productions, and for the purpose of establishing a better understanding in regard to the different forms of Graphite and their respective uses.

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PROBLEM OF SCHOOL SUPPLIES.

BY OTIS K. STUART.

School Boards quite generally organize about June 1st; that is, they then elect a president, treasurer and secretary, and appoint their various committees. The duty of one of these committees is to select and purchase "supplies" for the next ensuing school year, and this duty is usually performed in June or July, or in August. A few observations, therefore, on the subject of school supplies may be of value to such committees at this time.

In making these remarks, the writer distinctly disclaims any intention of criticising the actions of school directors as a body, for a wide acquaintance with them has convinced me that, in intelligence, probity and public spirit, they are above the average of the

American people, and I believe this is especially true of the directors in the State of Pennsylvania. Indeed, it is largely because of this belief that I venture to make the following remarks. Coming in contact, as I do, with school boards, and particularly with supply committees, in every part of this commonwealth, in cities, towns and country districts, I have at least a good opportunity for comparing the methods employed by them severally for conducting school affairs; and what I have to say is based upon this experience.

Without either approving or condemning it, it seems to me that the method employed by most committees in purchasing supplies tends naturally, and almost inevitably, to the introduction of the very cheapest and poorest materials into schools. Usually, a supply committee makes up a list or "schedule" of the articles it is expected will be needed during the next ensuing school term, and asks for bids on this list from local stationers or general school-supply houses or manufacturers. These bids are opened on a certain specified date, in the presence of the committee, and the award of the contract is often made to one or more of the bidders at that time.

The composition of these supply-schedules is affected in a variety of ways, too numerous to mention here. In a large, perhaps the larger, number of cases, the schedule is prepared by the secretary of the school board, he basing

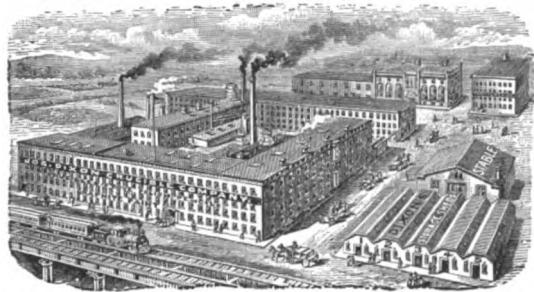
the estimates upon past experience; and thus in many districts the very same kind of supplies are used term after term for years, though each succeeding season brings forth decided improvements in school materials and tools. Of course, the development of the school system in such districts is arrested, and the children in those schools are handicapped in the race of life.

In a considerable number of other cases, the teachers, especially the "principals," of the districts are asked to make up lists of what supplies they will require individually, and these lists taken together form the general schedule of supplies on which bids are asked. If the district is large enough to have a "Superintendent of Schools," the composition of the schedule is often left entirely to him; while in still other cases, the chairman of the supply committee—frequently an active, forceful man—prepares the list; and so on. But no matter how it is composed, or by whom, a wide experience has convinced me, that in fully seventy-five per cent. of cases, these supply schedules are seriously defective, they are entirely too general; they are not definite, not specific enough—they do not specify accurately enough the precise materials desired. For example, take tablets, a very large number of supply committees ask simply for so many hundred, or so many thousand tablets; or, to take pens, for so many gross of pens—specifying no particular weight, brand, quality or make in either case. And yet, in spite of this indefiniteness, contracts are usually awarded to the lowest bidders. Is it not perfectly apparent then, that there is a constant tendency to introduce into schools the very cheapest supplies?

That this tendency is as real as it is apparent may be seen by the pencil consumption of the state. A careful investigation of the use of lead pencils in the public schools of Pennsylvania—an investigation which has cost much money, and which extended to every school in the commonwealth—proves that about sixty-five per cent. of these districts are purchasing the very cheapest pencils made. Now, the plain truth about such pencils is that they are made of the riff-raff of the pencil factories. The leads in them are culls or "seconds," every one of them having some defect. They may be too hard, or too gritty, or too brittle for use in the better and higher-priced goods; or they may be bent, so that when they are enclosed in the wood casing they will break at several points in their length; or they may be nicked at one or more points, so that when the surrounding wood is cut away they will break at those nicked points. Something is wrong with every one of them. And the writer is certain that no inconsiderable

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**GRAPHITE MINES AND MILLS AT TICONDEROGA, N. Y.
CEDAR MILLS AT CRYSTAL RIVER, FLA.**

OFFICERS:

E. F. C. YOUNG, JOHN A. WALKER, GEO. E. LONG,
President. Vice Pres. and Treas. Secretary.

JERSEY CITY, N. J., August 1901.

part of the expense for pencils incurred by not a few school boards is due to the great waste which is inevitable in the use of these cheap pencils. There is a point in the manufacture of any product at which, if you reduce the cost, you must lower the standard of quality or lose money; and as the later alternative means financial collapse, either the manufacturer is deceiving the buyer, or the cheapest goods are the poorest.

Nor is this waste the only, or even the chief, evil which results from the use of these cheap pencils. A pencil bears directly upon the handwriting of a child. If it is not smooth—if it is harsh and gritty—it will not write easily, and the attention of the child will be directed as much to forcing it over the surface of the paper as to the proper formation of the letters; if it is brittle, it will break easily, and need frequent re-sharpening, and thus the child's or the teacher's valuable time will be wasted, for it must not be forgotten that the lead pencils generally break at the most inopportune time—just when they are in use.

Moreover, there is a close relation existing between the quality and grade of a pencil and the kind and quality of the paper which should be used if good work is to be done. If the paper is soft, and especially if it has any "surface," a hard, gritty, brittle pencil is perhaps worse than useless to the child. In fact, the writer knows of instances where school boards have been compelled to purchase, at considerable additional expense, paper of fine quality simply because the pupils were furnished poor, cheap pencils. If, together with the fine paper, they had supplied fine pencils also, greater economy would have resulted, and a surprising advance made in the pupils' work.

It is, indeed, impossible too strongly to insist upon this

last point. Good work cannot be done without good tools; and good work implies economical work. Who would attempt to fell a forest with a dull axe or a toy hatchet? At a recent meeting of the Eastern Art Teachers' Association, in Philadelphia, it was plainly evident that by far the best examples of drawing came from those cities, towns and districts where the best tools and materials are used in the schools. And that it is true economy to use the best is proven by the experience and universal practice of successful business houses and large corporations. The Pennsylvania Railroad Company, for example, which is admittedly under the very ablest management, uses only the best stationery it can buy; and they do so not because of appearances, but for the sake of economy. The great controlling desire of its managers is to pay dividends, and its entire policy is formulated and carried out with this object in view. Now, the object of the public school system of Pennsylvania is to make good citizens—that is, citizens who will be self-supporting, independent, intelligent factors in the community. In the selection of text-books there can be no doubt that this object is uppermost in the minds of school directors; but in the selection of "supplies" it seems often to be forgotten. The desire of directors in adopting text-books is to secure the best, obtainable, and it is not often that *price* is here a controlling factor; but in purchase of supplies the object seems frequently to be the smallest expenditure of money, and it is not often that *quality* is here the controlling factor. This appears the more strange when we consider that the supplies are simply the tools with which pupils practice what they learn from text-books. If it is a fact that practice is more valuable than theory—that only by practice is theory truly grasped—that one learns a truth only when one actually *uses* it—then it is at least as important that the supplies of a school be of the best, as that the text-books be of the best.

Finally, there are branches of study, of prime educational value, progress in which depends almost entirely upon the tools used. For example, writing and drawing. If regular, legible, rapid penmanship is to be acquired, it is absolutely essential that the best tools be employed. The paper must be of the proper weight and quality, and the ink must flow readily, and the pens and pencils must be smooth and durable, no matter whether the writing-system be Spencerian, vertical, or what not. If the eye and the hand, as well as the mind, are to be trained by drawing; if the eye is to achieve discrimination, and the hand accuracy and delicacy of touch—then the drawing materials—the paper, lead pencils, paints, brushes and colored crayons—must be selected with a view chiefly to quality, and with price a secondary, though important, consideration. To attempt to teach writing or drawing without paper, or with the cheapest lead pencils, for instance, is like attempting to hew down a forest with a dull dull axe or a toy hatchet.

Do not handicap your school children. The struggle for existence is becoming daily more and more severe, and he who is best equipped must win the battle. A high standard of quality is a decided spur to effort, and inevitably brings out the talent of the pupil. When this talent is discovered, the battle of life is already half won.

—Pennsylvania School Journal.

"CARRYING COALS TO NEWCASTLE."

It is well known that India is the home of the graphite industry, so far as mining is concerned. Ceylon furnishes us the great bulk of graphite used the world over for the manufacture of crucibles and foundry facings, and for some other purposes; but for lubricating purposes there is nothing to equal the world-famous Ticonderoga Flake Graphite. The following letters will show that it is appreciated even in India and Arabia. Similar letters have been received before, some of which have been published in previous issues of *Graphite*.

"THE DAMODAR LAKHMDAS MILLS COMPANY, LIMITED."

Fergusson Road (P. O. Worli),

BOMBAY, 15th of February, 1901.

Messrs. Joseph Dixon Crucible Company,

Jersey City, U. S. A.

GENTLEMEN:—I have much pleasure to mention that since I have known about your graphite and have been using it, I must say that it is the long-felt want you have supplied to the mills and factories. On the tin boxes I have read about your pamphlet on graphite which you favor free to the users of your graphite. I therefore request you to be kind enough to favor me with your book on graphite which would enable me to make freer use of the same after reading it thoroughly and knowing its effects and advantages.

Hoping to be excused for the trouble; thanking you in anticipation, I beg to remain, gentlemen,

Yours faithfully,

A. R. BADHURJI, Engineer.

S. S. WOODCOCK, ADEN, Arabia.

Joseph Dixon Crucible Company, Jersey City, N. J.

GENTLEMEN:—The Graphite you sent me is very good. I use it in my steam chest and it keeps all the valves and piston rings and cylinder beautifully clean and polished —therefore I have not used any cylinder oil these last six months, since then I am using the graphite mixed with a little water.

Yours faithfully,

(Signed) N. N. SURVEYOR, Chief Eng.

AKOLA, INDIA.

Joseph Dixon Crucible Company, Jersey City, N. J.

GENTLEMEN:—I beg to state that by applying your Dixon's Graphite to the ram of my presses, the leather washers last much longer. By applying the graphite to the rams of the finishing press I am much delighted to state that up to the present no washers have been torn.

I have tried the graphite in all my presses and am convinced of all the facts stated above.

Yours faithfully,

(Signed) EDULJEE J. GIRWI.

A Nautucket carpet-cleaner advertises his establishment thus: "Carpets taken up, grease spots removed and carefully put back again."

CRUCIBLE OF ODD CONSTRUCTION.

A crucible or retort that embodies an odd construction is proposed by Arthur A. Crosby, of Chicago, Ill., the object being to expose the contents of the vessel more thoroughly to a very high temperature.

In carrying out this idea, the usual construction of furnace is provided within which is arranged a receptacle. This receptacle is preferably formed with a false bottom provided with numberless perforations. A pipe for the conveyance of liquid fuel leads from an exterior reservoir into the furnace and is provided therein with a number of coils, the inner end being arranged within the receptacle beneath the false bottom.

The inventor's idea in this is that the liquid after reaching the interior of the furnace will become heated and vaporized, then pass to the lower portion of the receptacle, where it is ignited, and the heat will be spread throughout the material within.

WHAT IS OLD AND WHAT IS NEW.

We are prone to consider as new many things that are really very old. According to Dr. Day, in *Mining and Metallurgy*, natural gas was used by fire-worshippers on the Apsheron peninsula, which points out into the Caspian Sea, six hundred years before the Christian era. It is probable that fire-worship originated in that vicinity.

It is likely that the gas burned as sacred fires for more than a thousand years, a tribute not only to the zeal of the worshipers, but to the early recognition of natural gas as a constant-burning fuel which required no attention. Even the lazy inhabitants of that region found time to build a great square temple enclosing another which was supposed to be supersacred to fire. It was only fifteen years ago that the Russian Government prohibited fire-worship, and the sacred fires in the temples of these idolators were then extinguished, probably forever.

TAKING OFF OF DISCOUNT ON BILLS.

F. H. Woodward in the *Age of Steel* says: If you were to go to a bank to have a note for \$500.00, payable in four months, discounted at 6 per cent, the interest or discount of \$10.00 would be deducted, and you would be given the balance and would not expect any different treatment. Therefore, why should you not treat the merchant or manufacturer any less fairly? One of the flagrant abuses in trade to-day is the taking off of discount on bills, long after the time allowed for discount. The loss that this amounts to would astonish manufacturers and dealers, if they were to figure it up.

The manufacturer or dealer should insist, the same as the banker, that the terms of the sale should be acceded to. The customers should be shown in unmistakable terms the injury to the seller and their own loss of credit, for beyond a doubt their credit is injured far more than they realize by their own acts. By this action on the part of dealers and manufacturers it is hoped the abuse may be rectified. All abuses are small at first, and only become evils as they are permitted to grow. Let the manufacturers and dealers take a firm stand for the principle and the abuse will be ended.

PACIFIC COAST BUSINESS.

While the population west of the Rockies may not be large, yet it is an industrious population and appreciative of Dixon's graphite products.

We lately shipped to our San Francisco branch 120,943 lbs. of freight, the total of 120,943 lbs. of freight was made up of an assortment of graphite paint, crucibles, black-lead, lead pencils, graphite and graphite grease. There were 1,115 packages in all.

SILICA—ONE QUALITY OF GRAPHITE PAINT.

An expert on paint matters tells why graphite paint is superior to lead paint.

In a paper read before the St. Louis Railway Club by Mr. H. C. Alford, on the subject "Corrosion of Iron and Its Prevention", he calls attention to the too rapid drying of oil paints, which by too rapid drying lose their elasticity and become checked and cracked, the checks and cracks being visible under the microscope, if not by the naked eye. He considers that only those pigments should be used which are neutral, such as graphite, silica and asphalt, and that lead paints and iron oxide should be excluded where durability is desired.

He calls attention to the fact that iron invariably rusts when in contact with wood; it also rusts when in contact with any substance that absorbs or retains moisture.

Not only should all exposed surfaces be well painted, all bolts and all bolt threads, before the nuts are put on, should also be well painted. Care and thoroughness are quite as necessary as good paint.

HE KNOWS THE VALUE OF DIXON'S GRAPHITE

AXLE GREASE.

A gentleman in Connecticut writes as follows:

"Inclosed \$1.20, for which please send me a 10-lb. pail of Dixon's Graphite Axle Grease. I used this in the western part of Minnesota for a number of years for nearly everything that needed lubricating on the large grain and stock farm I owned, to the exclusion of every other kind, except perhaps, oil for the engine. I have never found anything to equal it."

"Send by express or freight, whichever is cheapest, to Winsted, Conn. I have been unable to find it there anywhere. Evidently the dealers do not know a good thing when they see it."

WHERE IS KALGOOLIE?"

We have from time to time and in different ways and tones of voice said that Dixon's Graphite Products go to all civilized parts of the world, and parts that are not fully civilized. In fact when a globe trotter runs across an empty can bearing the Dixon's label he feels at once assured that he is pretty near where he can hear the hum of some kind of machinery.

Some days ago we made a shipment of graphite products to Kalgoolie, and the United States Customs Service at New York City wrote us as follows:

"To assist us in our statistical classification, will you kindly inform us in what country Kalgoolie is situated?"

We took much pleasure in advising Uncle Sam's officials

that Kalgoolie is in the mining district of far off Australia. The sun never sets on Dixon's Graphite Products.

WHAT YOU WANT.

The world admires the man who makes his mark. Likewise it admires the lead pencil that does the same, and it has no particular use for the pencil that will not do it. The pencil that scratches or grates against the paper till your teeth stand on edge, or wears slick and shiny on the point and refuses to leave a trace on the page, or breaks when you bear down on it, or even when you try to sharpen it—that pencil you have no use for. You want one that will write, under all circumstances, and be always on hand and reliable. Such a pencil you will find in Dixon's American Graphite Pencils.

TEMPERATE ZONE VS. TROPICS.

BY J. A. W.

A recent writer shows "that taking the British Empire as a whole it is found that every man, woman and child in the *not* tropical portions sends to England each year \$24.00 worth of produced material, whereas every man, woman and child in the tropical territory sends to England each year 66 cents worth of produced material. This ratio is more than 36 to 1. The largest expanse of non-tropical territory in the world is in North America, next in China, then in Central Europe, fourth in Australia, fifth in South America, sixth in South Africa. This shows one where to look for business, for where they produce 36 to 1 they want 36 to 1."



THE PENCIL (*to the eraser*)—"I say, my friend, don't you know it's extremely rude to rubber at what I'm writing?"

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POSSIBLE FAULTS IN BRIDGE CONSTRUCTION.

How Some Weaknesses May Be Prevented.

Mr. Victor C. Olderson, in *The Railroad Digest*, made a most forceful and timely statement when he said the relation between the engineer and the laws of nature is unique. The constructing engineer deals with the immutable,—the unchanging laws of inorganic nature. The judgment of the engineer's work rests upon harmony with Nature's laws, and she is merciless in showing his weakness.

Not only must the engineer take into consideration the necessary strength required in material, he must always have in mind the conditions to which his structures are subjected, and the agencies that are liable to destroy his work and endanger the lives of people making use of such structures.

The broken suspension rods of the Brooklyn bridge have called the attention of all constructing engineers to what may be a needed lesson in construction and inspection.

In view of the location of the bridge, exposed as it is to the surrounding salt air, the condemnation by the daily papers of the officials in charge is probably not warranted by the facts.

Where nuts and bolts are put together without proper treatment, and where surfaces, already rusting, are coated and covered with paint, oxidation of the metal is liable to continue until finally fracture appears. In the very beginning of the construction of a bridge, every bolt and nut should be coated with Dixon's Graphite Compound.

This treatment not only would prevent rusting, but would insure better and closer fitting. We ourselves know where Dixon's Graphite Compound has been used on threads of pipes and couplings, that have been under ground or in damp places. Years after, when those pipes were taken apart, the only places where rust had not formed were those treated with the graphite compound.

The steel cables of the bridges, wherever possible, should also be treated with the same graphite compound. The fine flakes of graphite will work in and around the strands and prevent both rust and abrasion. This has been well proven in mines and quarries.

Mr. Gus. C. Henning, who when the bridge was built acted as assistant to Mr. Wilhelm Hildenbrand, (who was Mr. Roebling's assistant, and who made the plans and calculations of the whole superstructure,) and who happens to have designed the suspenders, some of which have broken, adds his testimony to their security and concludes his letter by saying:

"In order that the same device may operate satisfactory during the life of the bridge it is only necessary to:

"(1.) Clamp the cable bands tightly and keep them in proper position, instead of permitting occasional unnecessary shifting.

"(2.) Lubricate all moving parts under all atmospheric conditions.

"(3.) Apply sufficient paint whenever necessary to prevent corrosion."

This is very simple, and it would seem as though it would be a very easy matter to secure the observance of such elementary rules.

The surfaces of all steel bridges should receive a shop coat and a priming coat of Dixon's Silica-Graphite Paint. No matter what the final finishing color may be, the first and preferably the second coat should be Dixon's Silica-Graphite Paint. That is the paint that has so thoroughly protected the four-track elevation of the Pennsylvania Railroad running out of Jersey City.

COATING VERSUS FILM.

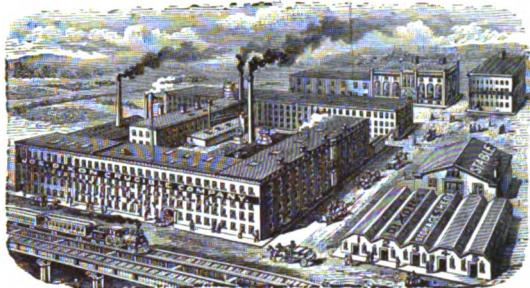
In paint matters, the word "film" implies not only the idea of a "coating" but also of a subsequent phenomenon, that of a coating which has been through a natural or artificial agency solidified into a transparent, opaque, permanent, pliable, or elastic membrane, capable of standing without disruption the contractions or expansions of the surfaces upon which it is applied.

From the very moment in which the oil is extracted from the crushed flaxseed until the product is called linseed oil, whether in a raw or boiled condition, the temperature exerts a direct influence on the degree of purity, the specific gravity, viscosity, chemical affinity, dissolving power and drying property of the finished product.

The film formed by the oxidation of pure linseed oil, kettle-boiled, with a finely ground Ticonderoga flake graphite distributed throughout this mass in the form of overlapping scales, minute though they be, has been found the very best protective paint for all metal work where durability and economy are the important points.

ESTABLISHED 1827.

INCORPORATED 1868.



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President. *Vice Pres. and Treas.* *Secretary.*

JERSEY CITY, N. J., September 1901.

LIQUID BRAZING IS BEST.

Referring to the subject of liquid brazing, which has come into such general use in the cycle trade, an English writer says that many classes of work are really done best by liquid brazing, in which the brass is maintained in the molten state in a crucible, either by means of converging blowpipe flames or a type of reverberatory furnace, and this process deserves to become more popular for all "end" work, such as liners, stay rod and fork ends; it is quick, sure and clean; burning is impossible, and there is no scaling, because there is no oxidization.

The drawback, however, appears to be the perishable nature of the plumbago crucibles, as they will rarely stand more than two heats, and the system is not adapted for odd jobs, but for long, continuous lots of work, though for some work the plumbago crucible may be dispensed with; and the writer has seen ordinary fire-brick, with a hollow scooped out, give excellent results.

Such a furnace is cheaply and easily constructed with a few fire-brick and iron gas piping for the blowpipes, the flames being projected downward at an angle from the sides, and meeting on the surface and in the centre of the bath of spelter, oxidization of the liquid mass being prevented by strewing a few lumps of sal ammoniac on the surface, and a few bits of zinc may occasionally be added to replace that which is dissipated by the heat. Liquid brazing, however, requires a high-pressure fan, constant blast and nice regulation.—*The Bicycling World.*

In American practice the Dixon crucibles have successfully stood a hundred hours' work, and fans, etc., have not been needed.

BRIDGE PAINTING.

How to Prepare the Surface, How to Apply the Paint.

The following suggestions are made by a paint expert of many years' practical experience in railway bridge painting.

Have all foreign substances, such as rust, scales or any mineral or animal oil *thoroughly cleaned off* before applying the first coat.

Before using paint, stir it thoroughly, and repeat at intervals while using.

I would suggest that your foreman of painters have some sheep skin swabs made, to get at portions of the bridge which cannot be handily done with a paint brush. This we find a very economical and good way to get at this part of the work.

The paint should be thoroughly and evenly brushed out, and well filled in around the rivets and other portions.

After the application of the first coat, I would recommend that it be left standing for three or four weeks before the application of the second coat, which should be applied in the same manner as the first.

As Dixon's Silica-Graphite Paint is made from nothing but the purest flake graphite and silica as a pigment, and pure kettle boiled linseed oil as a vehicle, no dryer being used whatever, you will find by allowing the time specified for first coat to dry, the best of results will be obtained.

GRAPHITE SAVES OIL.

The Use of Dixon's Pure Flake Graphite Increases the Durability of an Engineer's Oil Six Times.

An engineer in Greenboro, N.C., sent for a sample of Dixon's Pure Flake Graphite as advertised in the mechanical papers. After waiting until we thought he had had time to test its value, we wrote him and asked him what he had to say concerning the lubricating value of graphite. He replied that so far as graphite was concerned he had tried some so-called graphite and found it of no value, but was very glad to say that Dixon's pure flake graphite had given him a surprise. Where he had formerly required one quart of oil per day, now, by the use of only a small amount of Dixon's pure flake graphite mixed with the oil, one quart would last an entire week.

PENCIL POINTS OF INTEREST TO SCHOOL DIRECTORS.

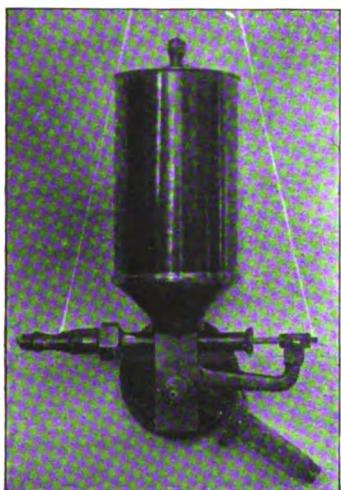
School pencils are used for the following purposes:

1. General work.
2. Free-hand drawing and shading.
3. Drafting and mechanical drawing.
4. Color work or illustration.

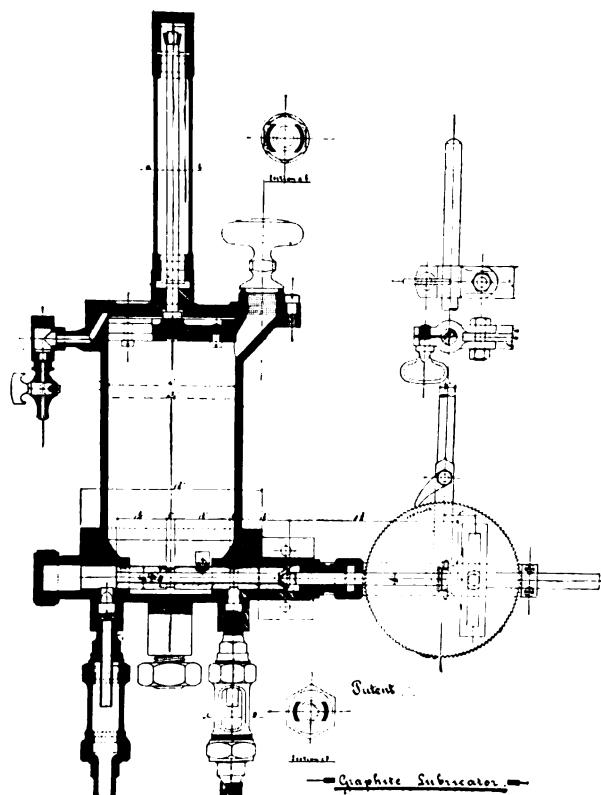
We have special illustrated circulars which treat in detail of these various uses of pencils and of the goods that we manufacture for these purposes. School directors can be materially aided in purchasing the most economical pencils by these circulars, and we shall be glad to mail them, together with samples of the pencils, to any school board on application, free of charge. Address us at our main office, Jersey City, N. J., or at branches: 68 Reade Street, New York, 1020 Arch Street, Philadelphia, or 304 Market Street, San Francisco, whichever is most convenient.

THE GIELOW AUTOMATIC GRAPHITE LUBRICATOR FOR AIR COMPRESSORS.

Herewith represented is the Gielow Automatic Graphite Lubricator, which feeds Dixon's No. 1 Dry Flake Graphite into any air compressor. It is absolutely reliable, and once in action, it requires no further attention until emptied.



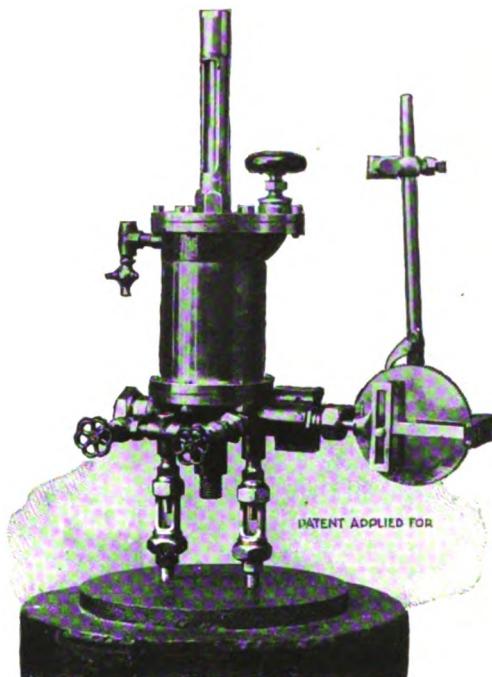
There are no valves to open or close when filling. All that is necessary, is to remove the lid from cup, and fill with Dixon's No. 1 Flake Graphite. The efficiency and results obtained with a constant dry graphite lubrication for air compressors is a revelation to engineers. The air compressors operate smoothly and noiselessly, especially when the temperature runs up to about 400 degrees. The Rebsamen & Almeroth Co. of Chicago, who are builders of a high grade duplex air compressor, equip all the air compressors leaving their machine shop with the Gielow Graphite Lubricator.



When air compressors are used to force up water from a well, and are equipped with the Gielow Graphite Lubricator, the water comes from the well clear as crystal and free from any odor of oil. This is impossible with compressors using oil as a lubricant.

The amount of graphite required to lubricate a Rebsamen & Almeroth Duplex Air Compressor making 60 revolutions per minute and discharging 130 cubic feet, is about three pounds per month, running full time. Previous to using Dixon's flake graphite the Company used on an average about eight gallons of first-class lubricating oil per month. Furthermore, when oil was used for lubricating the valves frequently stuck and it was impossible to get rid of the odor and presence of the oil in the water. The device can be placed on any air compressor or on blowing engines, such as are used in steel and rolling mills.

We also illustrate herewith the Gielow Automatic Sight Feed Lubricator for Steam Engines.



The lubricator operates against high or low steam pressure. It is a sight-feed which is always clear and visible, only darkening up when the discharge of graphite is taking place, and clearing up immediately after. The feed can be regulated to the amount of graphite desired. Mr. Gielow has made several very satisfactory tests in Chicago with the result that when the lubricator was used the valves operated smoothly and quietly, and there was no groaning or cutting of cylinders. One of the tests was in the plant of the Chicago Edison Company. About two years ago one of the Gielow Graphite Lubricators was placed on the largest unit in their Washington Street plant, and is giving excellent satisfaction up to this date.

The engine on which it was placed is of the Porter-Allen type, tandem compound, condensing, 1500 h. p., making 120 revolutions per minute, with a boiler pressure of 140 lbs. The amount of graphite used on this large unit is about three pounds in forty hours, and it can readily be seen what a great saving there is in graphite lubrication over oil lubrication.

The following testimonial may be interesting as bearing on the subject and the claims of Mr. Gielow:

CHICAGO, Ills., June 27, 1901.

It gives me great pleasure to state that we have placed several of the Gielow Automatic Graphite Lubricators on the Duplex Air Compressors which we manufacture, and the results obtained with Dixon's graphite, are very gratifying. The air compressors operate smooth and noiseless, no more valves sticking as is generally the case when oil is used, especially when the temperature runs up to about 300 or 400 degrees F. We also consider it a great saving, as a very small amount of graphite is sufficient for good results.

We recommend the Gielow Graphite Lubricator to anyone for the purpose named.

Yours truly,
(Signed) REBSAMEN & ALMEROOTH,
 89-91 Indiana St., Chicago.

THE BEST BREWING COMPANY, OF CHICAGO.

Fletcher and Herndorn Sts.

CHICAGO, Ills., July 12, 1901.

I have been using one of the Gielow Automatic Graphite Lubricators on our Rebsamen & Almeroth Air Compressor for the last three months, and it is giving excellent satisfaction.

The amount of graphite required to lubricate our air compressor is very little, about three pounds per month, no oil used whatever, merely the Dixon No. 1 Flake Graphite, and where the air compressor is required to force up water from a well and raking off beer, the water is as clear as crystal, no odor as is the case where oil is used.

I therefore cheerfully recommend it to be absolutely reliable, and to do all that is claimed for it.

Respectfully,
(Signed) R. S. MEUSER, Engineer.

For any other information regarding the Gielow Graphite Lubricator, we refer our readers to the inventor, Fred. Gielow, 172 Osgood Street, Chicago, who will be pleased to furnish all the information he has pertaining to the subject.

GRAPHITE PAINT COME TO STAY.

Such is the Opinion of an Expert in Bridge Painting, who for many Years considered Red Lead the Best Paint

A gentleman connected with one of the large trunk line railroads, and whose name it is not our privilege to mention at the present time, writes us as follows:

"My experience with red lead has covered a period of many years, while my experience with graphite has only extended over a period of about four years, or since August, 1897. My knowledge concerning red lead comes from years of experience and observation. Red lead, you know, must be in the hands of proficient workmen, to secure the best results.

"To speak intelligently regarding any pigment or paint mixture, one should have it under observation for a long time; not for a few months or a few years, but long enough to know the maximum protective powers of such mixtures.

"I have been superintending the application of Dixon's

Silica-Graphite Paint to iron bridges since August, 1897, which was my first experience with any kind of graphite paint. Since that time I have used a great deal of it. I might also say that I have used several other brands of graphite paint during this time, the names of same I must omit, but, in my observation, Dixon's Silica-Graphite Paint is the best. In ordering graphite paint, I have always specified to my people, 'Dixon's preferred.'

"I have not had any very good chance to make a test of graphite, as all the bridges on which I have used graphite paints have been painted over old coats of other paints, or over iron primed with oil, one coat of graphite covered with one coat of paste lead. This, you see, would be no fair showing for any paint. We have a test on now of two coats of graphite on one section of the bridge and two coats of another paint on the other section. This I am watching with interest. These coats have been on now since October, 1900. The more I see and use Dixon's Silica-Graphite Paint, the more it grows in my favor as a protective pigment.

"I wish to say that if Dixon's Silica-Graphite Paint proves to be as good a protective pigment as red lead, it has gained a good reputation, for it is no shame to be as good as the best. Its equal with red lead as a protective coating would give it precedence over red lead, from the fact of the easy working qualities of graphite paint. In fact, Dixon's Silica-Graphite Paint seems now to be the leading paint for bridges to-day, and if it proves a success during periods which are made mention of in one of the letters you mailed to me, it has certainly come to stay.

"I wish to thank you for the very much esteemed letter which you addressed to me, and hope that in the future, as now, success will follow in the path of the Joseph Dixon Crucible Company."

THE SMART BUYER(?)

The Iron Age preaches a timely sermon under the caption of "An Unnecessary Weakening of Prices." It frequently happens that the buyer after deciding upon the successful bidder, informs the unsuccessful ones that he regrets his inability to give them the business, but that the one favored with the order had made a lower price than they quoted. This may usually be absolutely correct. It has, however, transpired on some occasions that the buyer did not tell the exact truth, and made the statement simply because he desired to frame a satisfactory excuse for having shown a preference for one of the bidders. This practice has a natural tendency to weaken the market subsequently for the particular product which had been under negotiation. The unsuccessful bidders being led to believe that their prices are too high, take their departure with their minds made up to make more vigorous efforts to secure other business. If they are salesmen they inform their principals of the occurrence, and naturally endeavor to secure a better price to quote on the next contracts. If they are principals themselves, they are at once disposed to make lower prices, unless the demand is such that they feel confident that they will be able to secure their share of new business coming up without making the concessions apparently justified by this experience.

The policy thus pursued by the purchaser is not only a

fit subject of attack from the manufacturers' standpoint, but it is also seriously unwise from that of the buyer himself. If the buyer is purchasing for a large manufacturing consumer his action in impressing the unsuccessful bidders that their prices were too high is well calculated to cause them to name considerably lower prices to his competitors in the same line. He thus assists these competitors to buy more cheaply than they otherwise would have been able to do. It would seem to be the proper policy for a buyer under any circumstances to content himself with stating that he had given the order to one of the bidders. No excuse would seem to be necessary to the others. This would then leave the way open for them to determine for themselves whether the successful bidder had been preferred on account of the relations of himself or his company to the buyer, or the quality or reputation of his product, or possibly a lower price. The chances are that the unsuccessful bidder would not immediately jump to the conclusion that a low price had been made. It would seem that very large consumers would be interested in endeavoring to keep prices of their materials up to the point at least at which they placed their own contracts. The matter is not referred to as anything new, as it has probably been a practice coming down from time immemorial. The point made, however, is worthy of earnest consideration, as it may have a good effect in maintaining prices.

A CHARACTERISTIC LETTER

From a \$1.50 a Day Engineer; but who would not be if He were Young and had the Chance of the Young Men of Today.

It is pleasing to know the friendly relations that exist between the Dixon Company and its various customers; whether they are presidents of railroads or humble engineers. As a matter of fact, however, we usually find that we are in rather closer touch with "The Man with the Hoe" than with the millionaire. The following letter is one quite characteristic of many similar ones that we have received. It comes to us from a small town in West Virginia:

"I am nothing only an old stationary engineer at \$1.50 per day, but I have not seen that day for some weeks now on account of sickness, but will be at it again shortly. I think Dixon's Graphite is a very familiar phrase to the majority of engineers and machinists, a good many of whom have had occasion to use it and see the results, while there is a multitude who only see the numerous and costly advertisements pertaining to it, and here it stops.

"Reading and studying an advertisement is one thing, and making use of it and trying the article that is advertised is another thing. I sometime wonder why people do not pay more attention to advertisements; I find that they are very helpful to me. If I were a young man and had the chances that present themselves to young men nowadays, I would not be a \$1.50 a day engineer. When I see an honest looking advertisement about something that ought to be useful, I usually say, Get some and try it and then you can tell by the results whether it will be useful to you or not. That is the way that I came to use Dixon's pure flake lubricating graphite. My first experience dates back to 1892. My crank-pin would heat and still be flushed with the best oil known. I saw an advertisement of Dixon's

graphite and sent and got a small sample package. I tried it, using it very sparingly, but the results were astonishing. I then sent for a five pound can and paid for it myself, and one trouble after another was gotten rid of; the black, mysterious flour has no equal the world over for the speedy cure of all sick and groaning machinery.

"There is no set rule to work by but common-sense will show any ignorant or intelligent person how to use it. I have used Dixon's graphite in every way conceivable and have the failure to see yet. As cheap and handy as this graphite is, I cannot for one instant see why it is not used more than it is.

"A person can find good lubricating and engine oil, cog or gear grease, but a little Dixon's graphite increases the value and staying qualities 100%. Last summer I had charge of a large steam plant in New Jersey and my first instructions from the president were to look around and get down the expense, if only a fraction of one per cent. About my second week there I got interested in oil. I was running three lubricators and using exactly seven pints of oil per day of ten hours. By using less oil I would have the awfulest groans and screeches, so I finally mixed some of Dixon's graphite with the oil, and got to perfection by using $\frac{1}{4}$ of a pint on hot water pump, $\frac{1}{2}$ -pint on feed pump and two pints on engine, or $4 \frac{1}{4}$ -pints less per day by using Dixon's graphite.

"Don't try and overdo the thing by using too much graphite, as it will stop up the tubes in the lubricator. I cleaned the three lubricators out thoroughly before using it and I never had any trouble. I used about one tablespoonful to the pint on bearings and saved over three quarts per day, and never after had such a thing as a hot box.

"The best results I got from bearings was to first clean them out. Get all the foreign substances out, and this can be done with a bucket-ful of hot water; then when ready drop a few drops of oil on the bearing or shaft, then sprinkle some of Dixon's Flake Graphite on, put cap on and pull nuts up just tight enough; next get some clean waste, put down in oil boxes very loose, put oil on until saturated, and then graphite. After getting along all right you can use oil one trip and graphite the next, but don't use it to excess. A drop or two of oil with a small bit of graphite at the proper time is better than a barrel of each at the wrong time.

"I will make the broad assertion here that when you throw out \$1.00 at one window for graphite, you pull in \$3.00 at the other window, saved from the decreased use of oil. When you are the happy possessor of a can of graphite, use it all around; in the cylinders, on rods, crank-pins, bearings; put it on your packing for boxes on gaskets, whether steam or water, on pipe threads, in fact use it wherever you use oil. I won't try to enumerate here the many places where it can and should be used."

"CONFFOUND BROWN!"

Brown sold more goods than any other man in the house. He worked hard; he was popular; every competitor would have paid big money to get a man who could do to others what Brown did to their salesmen. Brown said he made monkeys of them, and he did, as far as getting orders from right under their noses was concerned. The shipping clerk

swore by Brown, the receiving clerk at him. The books at the end of the year showed that Brown had sold twice as much as Smith, and at the same prices, and still Smith had made more money for the firm. Every one of Brown's customers seemed to labor under the delusion that his firm was run for their convenience; goods were returned, not because they were not up to the standard, but for a hundred and one reasons—style had suddenly changed; weather had been so mild—and Brown—well, everybody seemed to think Brown's firm would not mind. Brown's firm did mind, and the partners said, "Confound Brown!"

It would be almost impossible to say why Smith should be more successful. Take the blue ribbon hackney horse and the blue ribbon hunter—the good honest hackney—but do not compare it with that magnificent quivering mass of concentrated self-consciousness. No, it would be absurd to compare Brown and Smith, but then there was no getting over the balance sheet.—*Our Wedge.*

"BOILED" LINSEED OIL.

There are three methods employed in producing "boiled" oil. The first consists in boiling the oil at a temperature varying from 450 to 500 degrees Fahrenheit with red lead and litharge in the proper proportions.

The second method consists in simply mixing raw linseed oil at a moderate temperature with more or less proportion of a concentrated solution of lead and manganese-linoleate.

The third process consists in incorporating the oxidizing agent or the metallic oxides in the oil, under the action of steam heat.

The first method produces the kettle-boiled oil.

The second method produces what is known as "bung-hole" oil.

The third method produces what is known in the trade as "steam-boiled" linseed oil.

When the oil is extracted from the seed, whether by pressure or the volatile solvent process, it is not only the pure linolein that is squeezed out or is separated from the seed, but also the substance that is called the mucilage and various other substances, and these all exist in freshly-made linseed oil.

In the kettle-boiled oil where the temperature, as mentioned in first paragraph, is from 450 to 500 degrees Fahrenheit, the mucilaginous and other undesirable matter rises to the top of the oil and is skimmed off.

In the "bung-hole" process all of the mucilaginous matter and the undesirable substances are retained in the oil to the detriment of its quality as a paint oil.

The third process mentioned, which produces steam-boiled oil, is a quicker and more economical way of turning out an oil purified by heat, but as the heat is seldom or never over 300 to 325, very much of the undesirable impurities are left in the oil, and the steam-boiled oil is therefore inferior to the kettle-boiled oil, and is sold at a less price than the genuine kettle-boiled oil.

The Dixon Company has at no time used anything except the kettle-boiled oil, purified at the high temperature mentioned and freed as much as possible from all impurities. This is the oil used in making Dixon's Silica-Graphite Paint, which as a metal preservative is known the world over.

Productions of the Dixon Crucible Co.

Dixon's Black-Lead Crucibles and Retorts.

All sizes and for all purposes. Bowls, Dippers, Stirrers, Stoppers, Nozzles, Muffles, Sleeves, Etc.

Dixon's Brazing Crucibles.

Made in several shapes for dip-brazing.

Dixon's Graphite Boxes and Covers.

For baking carbons and filaments for electric lighting.

Dixon's Fine Office and Drawing Pencils.

Unequalled for smooth, tough leads and uniformity of grading.

Dixon's Colored Crayons.

In wood or solid. For schools, railroads, editors or factory.

Dixon's Lumber Leads.

Black or colors; for green or dry lumber.

Dixon's Felt Erasive Rubber.

For erasing pencil marks, type-writer work, or ink.

Dixon's Carburet of Iron Stove Polish.

The old reliable; in cake or bulk form.

Dixon's Pure Flake Lubricating Graphite.

A solid lubricant for all frictional surfaces.

Dixon's Special Graphite No. 635.

For lubricating cylinders of gas engines and all close or delicate mechanical parts.

Dixon's Electrotyping Graphite.

Used by the majority of practical electrotypers of this country.

Dixon's Hatter's Lead.

For coloring hat bodies.

Dixon's Plumbago for Shot Polishing.

Dixon's Plumbago for Powder Glazing.

Dixon's Plumbago Foundry Facings.

Dixon's Yacht Plumbago.

For lubricating and smoothing bottoms of yachts.

Dixon's Graphite Waterproof Grease.

For gears, wire ropes, hoisting chains and general machinery.

Dixon's Graphite Axle Grease.

Better and cleaner than castor oil for trucks, wagons, carriages.

Dixon's Graphited Wood Grease.

For use on trolley car gears which are enclosed in a gear case.

Dixon's Graphited Oil.

For use in all places where the use of a grease is impracticable.

Dixon's Graphite Cup Greases

For use in cups or open bearings, on spindles, shafting, etc.

Dixon's Oiled Graphite

Dixon's Lubricating Compound No. 688.

For enclosed gears of electric automobiles.

Dixon's Silica-Graphite Paint.

For metal or wood-work, roofs, bridges, telegraph and trolley poles, smoke-stacks, boiler fronts, and iron construction work.

Dixon's Graphite Pipe-Joint Compound.

For steam, gas and water piping, smearing gaskets and flanges.

Dixon's Cycle Chain Graphites.

For perfectly lubricating chains and gears of bicycles.

Dixon's Graphitoleo

For lubricating bicycle chains, sprockets, pivots and pins; gun locks, and for general use.

Dixon's Commutator Graphite

Will glaze the commutator with the finish so much desired by electrical engineers.

Dixon's Anti-Flux Brazing Graphite.

To prevent the spelter from adhering when brazing.

Dixon's Crucible Clay and Graphite Mixture.

For lining and repairing furnaces and fire boxes.

Dixon's Stove Cement.

For repairing stove or range lining.

Dixon's Traction Belt Dressing.

For preserving leather belts and to prevent slipping.

Dixon's Solid Belt Dressing.

Convenient for those who prefer a solid dressing.

Dixon's Graphite Resistance Rods.

From one-eighth to one inch diameter; any resistance required.

Dixon's Graphite Products for Electricians.

Special circulars with detailed information sent on request.

AN INTERESTING DIALOGUE.

And an Equally Interesting Moral Hitched Onto the End of It.

Brass Founder to amiable Dixon Salesman: "No, young fellow, I don't want any more Dixon's crucibles,—they are no good!"

Amiable Dixon Salesman (who has been behind the scenes and is posted): "How do you know they are no good?"

Brass Founder: "How do I know? Why, I have been using them!"

Amiable Dixon Salesman: "No, you haven't!"

Brass Founder: "Yes, I have, and I tell you they are no good!"

Amiable Dixon Salesman: "Of whom did you buy them, please?"

Brass Founder: "Bought them of Blank & Co., who say they are the Agents of the Dixon Company."

Amiable Dixon Salesman: "Blank & Co. are not agents for the Dixon Company and don't sell the Dixon crucibles. Let's go in the shop and see the pots."

They go and behold the "no good" pots; they are not Dixon's, but are of another make.

MORAL:—The reputation of the Dixon Crucible Co. is traded upon frequently. If you buy of dealers, not only ask for Dixon's but be sure you get Dixon's, and equally sure that all are Dixon's, for sometimes one or two or more of inferior make are put in.

The Dixon crucibles are always good.

LONG LIFE OF A CRUCIBLE.

Recently a Dixon's crucible, No. 225 in size, run 102 heats at the works of the Ajax Metal Company.

The life of a Dixon's crucible, while measured in heats and not in years, should, like that of man, reach the three score and ten mark. The average life of man is about 32 years and, curiously enough, that is about the average life of a Dixon crucible. Occasionally one rounds the century like the one mentioned above.

STANDING STILL MEANS RUIN.

Our Wedge says: Some months ago the powers that be prohibited "crawling" in the city of London. "Crawling" is, or rather was, confined to the hansom cabs. When waiting for a fare, the driver would "crawl" through the busy streets until he found a passenger. When these cabmen learned thereafter they must take position at the cab stands and stand there until called, they raised a cry of alarm; they said that the man who stood still got few fares, and would soon be ruined. As a matter of fact, many were forced out of the business. Standing still meant ruin; even "crawling" only meant a bare living, unless done with a brain. An intelligent "crawler" would keep his eyes open for a man evidently in a hurry, and would than tantalize him by "crawling" just a little faster than he was walking—nine times out of ten, if the distance warranted it, with the desired result. No cabman expected to be carrying passengers all the time, but those who wanted to make a living never had time to stand still.

The man that stands still, or even keeps in one rut, whether he is manufacturer, salesman, or any other man, will soon find himself in "innocuous desuetude."

PAINT REFERENCES.

We are daily in receipt of interesting letters from all over the world, telling of the great protective and wearing qualities of Dixon's Silica-Graphite Paint.

In April this year, our New England representative reported a careful inspection of the Chelsea Viaduct of the Boston & Maine R. R., Mystic Wharf, Charleston, Mass. This railroad structure, situated along the water front, received two coats of Dixon's Silica-Graphite Paint when it was erected in August, 1894. The examination showed the paint to be in perfect condition, and repainting will not be required for a number of years. This convincing reference shows the economy of Dixon's Silica-Graphite Paint in its use for priming and decorative coats of new steel work.

Nelson Morris & Co., Union Stock Yards, Chicago, Ill., used Dixon's Silica-Graphite Paint to prevent formation of rust on rails in the killing room. The conditions are unusually severe, and the paint has proved its adaptability and superiority for this class of work.

Our readers may have an opportunity of examining the appearance and wearing qualities of this paint on the following structures—one mile steel elevated structure of the Pennsylvania Railroad Co., Jersey City; two mile elevated structure of the North Hudson County Railway Co., Hoboken, N. J.; Willis Avenue Bridge, crossing the Harlem River and the N. Y., N. H. & H. R. R. freight tracks at 125th Street and First Avenue, New York; steel smoke-stacks of the New York Edison Electric Co., New York City; gas holder of the Flatbush Gas Co., Brooklyn, N. Y.; Kentucky & Indiana Bridge, Louisville, Ky.; Interior Grain Elevator Buildings, Minneapolis, Minn.; Kentucky Public Elevator Buildings, Louisville, Ky.; Babcock & Wilcox Buildings, Bayonne, N. J.; Standard Underground Cable Company Buildings, Perth Amboy, N. J.; Eastern Carbon Works and Mutual Chemical Company Buildings, Jersey City.

It is impossible to make reference to the thousands of tin roofs in different cities and towns, which bear witness to the handsome appearance and protective qualities of this paint.

Our paint department will give you local reference and full information concerning the use of Dixon's Silica-Graphite Paint for protection of different classes of metal work.

DEDICATED TO THE PAYMASTER.

I have hot pains in my larynx and my liver is out of whack,

There are rumblings in my stomach, there are creakings in my back;

When I go to bed at evening I can only cuss and groan, For my mouth tastes like a hen's nest and my head feels like a stone.

And I read in poultry papers all about McCloskey's pills As a sovereign specific for these kind of awful ills.

And I buy the pills and eat them, and I feel a d—n sight worse—

There are times when the boys tell me to telephone for the hearse.

THE PASSING THROG.

John A. Walker, Vice-President and General Manager of the Joseph Dixon Crucible Company, of Jersey City, told recently of a trying experience he had while in Europe last summer. "As is its inherent right," said Mr. Walker "each separate country makes its own laws, and to each are attached certain customs and habits. Sometimes either the law or the custom may work an injury or inconvenience to the innocent alien, and I was put to much inconvenience last fall by a difference in the matter of dating in Belgium and in Germany. I had purchased a railway ticket at the tourist bureau in Brussels, limited to November 10. The bureau agent, following the custom that prevails in Belgium, stamped the ticket 10-11-1900, exactly the opposite way from that which we would stamp it in this country, and as I was to find out to my sorrow, different from the custom in Germany. At the Brussels station the ticket was received, clipped in due form and returned to me without comment. As we stopped at Cologne for nearly forty minutes, we took advantage of the wait to visit the great cathedral. Upon returning to the station the ticket was refused. To the German official it read October 11 instead of November 10, and he would have none of it. The thirty day limit of the ticket thus being up, he simply would not take the ticket. Thereupon we went to the official in charge of the station, explained to him the way in which the ticket had received the date, and appealed to him to rectify the error. We made a swift decent from frying pan to fire by so doing, for instead of picking up the gatekeeper, as we had supposed he would, he promptly sent for the coupons reading from the German frontier, which had already been torn off the tickets. For these he made us refund in cash and compelled us to purchase new tickets for the remainder of the journey to Berlin. We were politely but firmly referred to the tourist bureau at Brussels for redress. In Belgium they stamp the day first, in Germany the month, a confusion of customs that might readily lead to serious results. For example, suppose a traveler's money was nearly exhausted, and he was intending to replenish his purse at the next stop. He stays the limit of time his ticket reads, and then starts on, only to be ejected from the train in a strange city in a strange country, thousands of miles from home. He is put to infinite trouble, inconvenience and humiliation through no fault of his own, and it is all but impossible to secure redress. That is the sort of error that should never be allowed to happen."

--*New York Tribune.*

WHAT GRAPHITE WILL DO ON PIPE THREADS.

Mr. Lewis F. Lyne is a well known mechanical expert and an old friend of the Dixon Company. A letter lately received from him contains the following:

"Perhaps the following testimonial may be of interest to you. In 1884 the writer erected a steam plant in which there were considerable large pipes, the largest being 7 inch. It was put together with graphite and boiled oil upon the threads. Now, after almost eighteen years of service continuously in an electric light station, this pipe has been taken down. It was unscrewed without hammering the

ON TOP,

Exposed to the Rust-forming Elements, Rain, Snow, Heat of the Sun and Wind-driven Dust,

DIXON'S SILICA GRAHITE PAINT

Protects from Corrosion the Tin Roof of the



JOHN WANAMAKER STORE,

BROADWAY, FOURTH AVENUE, NINTH AND TENTH STREETS, NEW YORK CITY.

The Contracting Painter used 160 gallons Dixon's Silica-Graphite Paint, color No. 2, in painting two coats of the 57,000 square feet of tin roof (old).

1st coat covered perfectly 619 square feet to the gallon.
2d " " " 848 " " "

Color No. 2 gives the appearance of slate, and protects for years.

ONE GRADE—FOUR COLORS.

fittings, and not a single one was lost. The threads were found to be bright and not a sign of corrosion or rust visible anywhere. Had these pipes been put together in the ordinary way, everyone of the large fittings would have been sacrificed, and it would have been absolutely impossible to unscrew them. Of course this result is bad for the supply business and the manufacturers of pipe fittings, but it is a wonderful testimonial in favor of the owners of shops and manufacturing establishments where fittings are used.

"With best wishes, I am,

Yours very truly,

LEWIS F. LYNE."

We have within the past week had a similar experience. We took apart a steam pipe drying apparatus, part of which had been put together with Dixon's Graphite Compound and part with red lead. It had been in use for ten years or longer. The joints put together with graphite came apart with ease, and the threads were bright. The parts put together with red lead were set, and the men cussed and broke the joints with hammers.

PRINTERS using Linotype machines should send for a sample of Dixon's Linotype graphite.

Graphite

VOL. III.

OCTOBER 1901.

No. 11.

Issued in the interest of Dixon's Graphite Productions, and for the purpose of establishing a better understanding in regard to the different forms of Graphite and their respective uses.

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ODD THINGS IN PENCILS.

Some For Use on Glass and Some For Use on the Human Skin.

Black lead pencils are of course the kind most commonly used, but colored lead pencils are in the aggregate sold in large numbers, and they are made in very great variety.

Artists' lead pencils are made in more than 50, in perhaps as many as 100 colors. In these pencils, with the lead in wood, the wood is finished of a color approximating as nearly as may be that of the lead. A tray of samples of such pencils thus presents a very striking appearance, making more than a rainbow of color.

There are made also colored leads for use in pencils for movable leads. These artists' pencils of one sort and another are used not alone by artists, but by architects, engineers, designers, draftsmen and others having occasion to use fine colored pencils.

Then there is a great variety of colored pencils for general use, for checking and marking and so on, in office and store and library and factory, some of these being sometimes used on textile fabrics as well as on paper and wood.

There are colored pencils, these also being made in various colors, that are especially designed for the use of lumbermen, as there are also pencils with leads of various colors made especially for the carpenters' use.

No doubt the common idea of a lead pencil is of something with which we mark on paper, although the use of pencils for marking on wood is familiar enough, as in a more limited way is their use for marking on fabrics, and so on. But there are various uses to which pencils are put that must be less familiar, if not indeed quite unknown to many.

There are, for example, pencils especially made for marking on glass, porcelain, polished metals, oil cloths, patent leather and other things upon which an ordinary pencil would not mark at all. The leads of these pencils are of course made of a material especially prepared for the purpose. With such pencils, marking is done easily on any of these hard polished surfaces, and the marks may be as easily rubbed off.

These pencils are in use in drug stores and hardware, glass and crockery stores, and so on. They are made with white and black leads and with leads in a variety of colors, the colored pencils being the more generally used, and the colors most commonly used being red, blue and yellow.

Another odd sort of pencil is one made for the use of surgeons for marking on the skin in surgical operations and for anatomical purposes. These are also colored pencils, and they are made in a variety of colors.

In fact, simple a thing as the lead pencil might seem to be, it is really something that is made in almost endless variety. But for all that the pencil manufacturer gets every now and then from somebody a demand for new pencils for some special use.—*New York Sun.*

ALL SORTS IN THE DIXON MAIL.

A Monday morning Dixon mail is as interesting as a visit to a museum of natural history. There are all kinds and all sorts, from all parts of the world—the Saturday steamers bringing in the foreign letters and papers.

The following was received in a late mail:

"Mr. Dickson, Dear Sir, hav you got the shoe coblers outfit iron stand 3 lasts and hamer shoe knife pinchers alls and handels peging and soing all pints and all kinds of shoe tax if you havent them you let me no hoo has them also shoe thred and wax let me here from you soon as you git this."

As he gave his name only and left off his city and state he did not "here" from us.

The same mail also brought us a letter from Antwerp for Dixon's Graphite Compound for joints of steam pipes. The letter was addressed:

Joseph Dixon Crucible Co.,
Jersey City, foreagainst New York,
United States of America.

AFTER 17 YEARS' USE OF DIXON'S GRAPHITE AXLE GREASE.

"Kindly send me by freight 20 cans of Dixon's Graphite Axle Grease. You still make the best axle grease on earth. I began to use it 17 years ago last month, and have never had any reason to change.

My best wishes for your continued success.

Yours very truly,

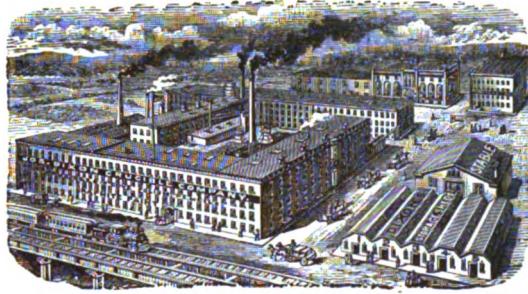
C. E. STEVENS,
Prop. The Elmwood, Readfield, Me.

April 3, 1901."

ESTABLISHED 1827.

INCORPORATED 1868.

DIXON'S FLAT PENCIL.



JOSEPH DIXON CRUCIBLE CO.
JERSEY CITY, N. J., U. S. A.

SALESROOMS AT

68 Reade St., New-York. 1020 Arch St., Philadelphia.
304 Market St., San Francisco. 28 Victoria St., London.

RESIDENT REPRESENTATIVES :

BOSTON. CHICAGO. ST. LOUIS. PITTSBURG.
PARIS. HAMBURG. VIENNA.

GRAPHITE MINES AND MILLS AT TICONDEROGA, N. Y.
CEDAR MILLS AT CRYSTAL RIVER, FLA.

OFFICERS:

E. F. C. YOUNG, JOHN A. WALKER, GEO. E. LONG,
President *Vice Pres. and Treas.* *Secretary*.

JERSEY CITY, N. J., October 1901.

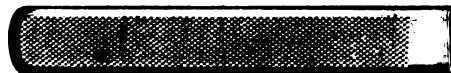
INKLESS PRINTING BRIEFLY EXPLAINED.

The Leavenworth (Kansas) *Times* gives the following brief description of inkless printing: Certain chemicals are mixed with the paper pulp and the paper when manufactured is just like ordinary paper, and as the chemicals are cheap, the paper costs little more than ordinary white paper. When touched with an electric current it yields a dense black mark, which is indelible. Ordinary presses, such as are now in use, divested of the inking mechanism, can be fitted with the electric apparatus. One wire of an electric circuit is attached to the type or stereotype plate and the other to the cylinder that presses the paper against the type. The current causes every spot in relief on the type touching the paper to print its form on the paper, just as if ink were used, but without any dampening and smearing. It is said that half-tones, electrotypes, wood cuts, and all metal designs in relief print more perfectly than by the present method. The current passing through an incandescent lamp is sufficient to do all the printing on a large press.—*Press and Printer*, Boston, Mass.

TELEPHONE COURTESY.

It is hard to see why one should not receive the same courtesy and attention whether he presents himself indirectly by the telephone or actually in the body at his correspondent's place of business. Too little attention has been given to the employment of clerks to answer the telephone, and many employers have apparently forgotten that the telephone is an open door and that it should be guarded by a person of intelligence, discretion and good manners.

—*Electrical Review*.



There are all sorts and kinds of pencils for pocket use. In fact, most of the lead pencils in use find a resting place in the pocket some time or other. The most convenient pencil for the pocket is one of the pattern shown above. It is a flat, thin pencil in a flat metal case. The pencil contains a high-grade lead, and the case is beautifully nickelated and ornamented. All the stationers will shortly have them in stock, but if you would like to have one now send us 10 cents in stamps.

DIXON'S GRAPHITE COMPOUND.

Its General Usefulness in Engine Rooms.

An engineer in London, Ontario, Canada, writes us, saying:

"I received the sample of Graphite Pipe Joint Compound and Pure Flake Lubricating Graphite sent me, and I have found them all right.

"I tried the Graphite Compound on the boiler hand-hole plates and bolts, and it has given me the best of satisfaction.

"I used the Flake Graphite in the cylinders of the engine with most satisfactory results.

"I shall continue to use these two articles in future, as I find them all that you represent them to be. I have given them both a full trial, and have been so well satisfied that I bought a supply of the goods here in London, as I found them for sale by the dealer here."

THINGS BETTER LEFT UNSAID.

According to an exchange this is a prolific subject upon which one might dilate indefinitely. Certainly there is nothing more detrimental to pleasant and satisfactory business relations than the unfortunate habit of making malapropos remarks and writing uncalled-for letters.

Every one is more or less liable to acquire this habit. It is, however, a propensity which may be overcome if properly treated. In business this habit is particularly dangerous and always apt to get the perpetrator of it into trouble.

The whole science of living and doing business is involved in knowing what to say and what to leave unsaid.

GRAPHITE CUPS ATTACHED TO TALLOW PIPES.

For Lubricating Steam Chests when Engine is Rolling Down Grades.

An engineer writing us concerning our pamphlet, entitled "Making Records," says:

"I assure you that your pamphlet, entitled 'Making Records,' was read with pleasure. It contains some valuable information about how to use graphite. Now, the road I am running on, (The Georgia Southern and Florida), has been using graphite about eight years, and we get good

results from the use of it. We have on all our engines graphite cups attached to tallow pipe where it goes into steam chest, and when the engine is rolling down hill it sucks the graphite out of the cup. The feed can be adjusted as desired. We have been using Dixon's No. 1 Flake, but I shall take the samples of No. 2 Flake which you sent me, and give them to our master mechanic, and I think he will be pleased with the finer grinding of the No. 2 Graphite. It may feed even better than the No. 1."

We omit the name of the engineer, as it is our experience engineers do not like to have their names mentioned.

GRAPHITE FOR TYPEWRITERS.

Graphite Finds a New Use and a New Prophet.

Mr. Julius R. Black, in *The Mexican Herald*, in some interesting details on typewriting, says one of the whims of the younger generation of operators, is to use sufficient oil on a typewriter to run a locomotive with. This is bad practice, as it not only interferes with the rapidity of the machine by gumming it up, but also creates an oily surface over everything connected with the machine that persists in drawing dirt and dust, making the machine look untidy constantly. Mr. Black's practice is to use about half the amount of oil prescribed by the maker of the machine, and to use, on friction surfaces, wherever possible, a graphite lubricant.

We would recommend a finely powdered graphite like Dixon's No. 635 Graphite. It may be used from an ordinary squirt can as readily as oil.

INCREASED FRICTION OF MACHINERY.

Due to Good Times and Rush of Orders.

During some time past many manufacturers have been greatly puzzled over the fact that the bearings of their machinery have heated far more than previously. We have received many letters on the subject with inquiries if Dixon's flake graphite would help matters. We have usually found on careful investigation that the over-heating manifested itself almost immediately after increasing the speed of the engine and machines. During very hot weather the over-heating is even more apparent.

In an article on this subject in *Machinery* for August, the writer says: When power and speed are increased it is not surprising that the heat from friction is developed more rapidly than it can be carried off by the surrounding atmosphere. A machine has been successfully operated at a certain speed with no trouble from hot bearings, etc. To increase the production this machine may be speeded up, or another machine designed and built to run at a considerably greater speed. The result under both conditions often has been that trouble, if not failure, resulted simply because the critical point had been passed, at which more heat was generated by friction than could be carried away by the ordinary circulation of the surrounding air. In any ordinary bearing friction causes heat. If operated at low speed, the heat is carried off without perceptably increasing the temperature of the bearing, but as the speed increases, the mean temperature of the bearing will increase until a temperature is reached at which ordinary oils fail to properly

lubricate, so that any increase of speed or pressure beyond this critical point becomes rapidly destructive.

When 5 to 10 per cent. of pure flake graphite is added to the oil, the lubricating value of the oil is largely increased, and at the same time the bearing is kept far cooler, due to the fact that graphite has a far greater heat conductivity than oil.

Furthermore, the minute flakes of graphite form a veneer-like coating on the bearings of a marvelous smoothness.

The substitution of grease cups in place of oil cups has largely increased during the past year or two with better results in lubrication and economy.



It looks as though he's got a splendid pointed mustache, doesn't it?



But to come down to brutal fact, you see he hasn't. Another optical delusion caused by a mere pencil.

—Wade's Fibre and Fabric.

THE DIXON TRADE MARK.



While the Dixon name and labels are fully protected by the common law in the United States and England, yet in some of the foreign countries it has been found necessary that we should have a distinctive trade mark, and have it registered in the United States and in foreign countries.

We have selected the simple yet striking device shown above. We have registered and have the right to use the device either with or without the letters D X N.

LUBRICATION OF GAS ENGINE CYLINDERS.

It is claimed by good authorities, and the statement is very likely correct, that the temperature attained by gas exploded in the cylinder of a gas engine is from 2000° to 3000° F., depending mainly upon the compression experienced by the gas before the explosion. It is because of such high heat that satisfactory lubrication of gas engine cylinders has been impossible where oils alone have been used.

The employment of a finely pulverized flake graphite has produced such satisfactory results that the attention of gas engine users may profitably be called to some of the experiences.

An official of the Pennsylvania Company wrote us as follows:

"I had a gas engine at Sharon, Pa., running a pump, and the man that had charge of it allowed the lubricator to run dry and cut the piston, piston rings, and cylinder. The makers of the gas engine said the cylinder would have to be sent to the shop and bored out and a new piston put in. It was our busy season, and we could not do without water. I had some of Dixon's finely pulverized Graphite, and I commenced to feed it into the cylinder through the suction pipe with the air and gas with immediate relief. After about two weeks the engine was running smoother and using less gas than ever before."

"I had this same engine apart last Saturday, and every place that was cut is smooth as glass. This one instance saved us about \$75.00. I have great faith in Dixon's Graphite, and always keep it on hand."

The following came to us from our London branch:

"TO THE EDITOR OF "GRAPHITE."

Dear Sir:—The works manager of one of the largest cycle manufacturing firms in England, in conversation with me, stated that his engineer reported difficulties with his gas engine. Upon inspection it was found that the side shaft was full of holes—galled in its bearing; and became so hot as to cause a fracture in the bracket. It seemed as though both a new shaft and a new bracket were necessary. However, a spare bracket was found in stock, but no shaft, and the works manager, remembering having been canvassed a few days before by the local engineers' stores dealer, sent for a tin of Dixon's Finely Pulverized Flake Graphite, No. 635. The spare bracket was put in place on the galled shaft; some graphite was applied; the engine was immediately started. It is now running as cool and as sweet as ever."

We are of the opinion that the best results will probably be obtained by mixing Dixon's No. 635 Graphite with good oil, as the oil will help to retain it in the cylinders of engines, and also help to carry it to all parts of the cylinders or bearings.

We recommend it for cylinders of all kinds of engines, and for gas engine cylinders it is absolutely indispensable if best results are to be obtained. We also recommend it for all bearing parts of small motors, for air brakes, cylinders and pistons, and for all valve seats, screws of presses, etc. In fact, we recommend it for all use where friction is to be overcome, and it is well to bear in mind that if 5% or 10% of Dixon's No. 635 is added to any oil or grease,

the efficiency of that oil or grease will be very largely increased. There is nothing in the market that equals it in the way of a pure, finely pulverized graphite.

If your supply house does not keep it write to us direct.

A NEW CATALOGUE.

A very attractive catalogue has recently been issued by the advertising department of the Joseph Dixon Crucible Company, Jersey City, N. J., having reference entirely to the graphite productions which form the bulk and volume of the products of the company. Characteristic of everything that emanates from this house, the pamphlet of 78 pages is superbly illustrated with half-tones, the entire contents being printed on superior coated paper, making it a work of art throughout. The artistically designed cover is a pictorial gem in itself. Illustrations are given of the mechanical operations connected with the making of many of the products referred to, while the goods produced, many of which are extremely prosaic in character, are shown in artistic groups that indicate the taste and skill with which this pamphlet has been compiled. The line of articles to which reference is made is a lengthy one, too much so for us to make any extended reference to individual specialties. It's enough to say that everything relating to the graphite line or to the use to which this mineral may be applied, is embodied in its contents. No more instructive catalogue could be selected by the hardware dealer, and the application for it will be promptly responded to by the company, who desire to see it widely distributed.—*Hardware.*

GRAPHITE PAINT AS A PROTECTIVE COATING FOR METAL SURFACES.

Do Not Condemn It Because You Have Tried One of the Many Imitation and Adulterated Graphite Paints.

Dixon's Silica-Graphite Paint is the original. It has been giving the best of satisfaction for nearly forty years, and we have a right to claim it is the most durable protective paint on the market.

An experience of 74 years in mining, importing and manufacturing all forms of graphite, qualifies us to select the grade of graphite best suited for a paint pigment.

We use, in the manufacture of Dixon's Silica-Graphite Paint, the most expensive, hardest and toughest form of graphite mined in the world. This pigment, in combination with the purest double fire-boiled linseed oil, produces a protective coating that cannot be otherwise than durable and economical.

Quality is at all times assured, as the paint is manufactured in but the *one grade*.

Thousands of structures in different parts of the country painted during the past 38 years, testify to the fact that Dixon's Silica-Graphite Paint, honestly applied, will protect iron and tin roofs from corrosion for 5 to 10 years; steel viaducts and bridges from 5 to 15 years, and steel smoke-stacks from 1 to 5 years.

Our paint department will furnish you with interesting references and data as to the economy of using a properly made graphite paint.

Graphite

VOL. III.

NOVEMBER 1901.

No. 12.

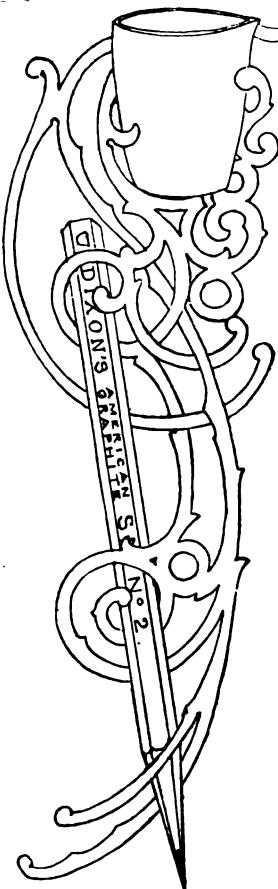
Issued in the interest of Dixon's Graphite Productions, and for the purpose of establishing a better understanding in regard to the different forms of Graphite and their respective uses.

COPYRIGHTED BY THE JOSEPH DIXON CRUCIBLE CO., JERSEY CITY, N. J.

THE SECRET OF SUCCESS.

The secret of the success of the great business enterprises of the world lies in the talent of some man at the head to get folks who can do things and then let them alone to do them. It requires much less talent and genius to find the man to "deliver the message" than to keep your hands off and let him do it. One business that the writer knows of has practically reached the limit of its expansion because the man at the head of it isn't big enough to let folks do things; he is always interfering with the method; his employees have no individuality in their work; they try to do it "to please the old man" rather than to promote the business, but he doesn't encourage the expression of them; he overrides new suggestions because they "cost too much," or because

he doesn't "consider them practical," or because the man who makes the suggestions "doesn't know anything about it." A discouraging case for an employee who really wants to improve his own condition by improving the business he is in.—*Ad Sense.*



DIXON ON A WHITE MOUNTAIN VACATION.

A vacation is a time when one goes where he pleases, does what he pleases and lets things for a while take their own sweet will. It should be spent also in holiday mood; they should be days when one is non-critical and pleasant with everything.

In this spirit, boats and cars took us one hot day to the White Mountains, New Hampshire. The flush and bloom of midsummer was still on the mountain landscape. Nights and mornings the mercury dropped into the sixties, and cooled off the victims who had escaped the humidity of 70° and the toasting heat of 92° in the city. Everywhere in the White Mountains the scenery is lovely and, excepting only the snow-capped peaks of Switzerland, is as fair to look at as anything in Europe.

No one can ever forget the railway ride through the White Mountain Crawford Notch. Except the ride up the Rigi or the ride over the Semmering Pass, going from Vienna to Venice, it has no superior either in Europe or America. It

gives one an hour and a half of scenic beauty. Where the track is laid, the elevation is some 1600 feet above the sea, and the mountains around rise almost sheer 3500 feet more. The hour there in the observation car is a genuine sensation. It is no use to describe it, it must be seen. A glorious sequel to the Crawford ride is the logical next step, the ascent of Mount Washington. The cars leave Fabyans two or three times a day and climb toward and into the clouds. It is the steepest car-track ascent in the world. As you rise the horizon widens till the whole world, so to speak, discloses and lays at your feet. Shining in the distance, ninety miles away, you see near Portland, Maine, Casco Bay Water. We went up in the cars on one side, and down in a surrey wagon on the other.

The down ride was a revelation. We zigzagged down the gigantic mountains, riding eight miles to make a half mile, and came out at the site of the old time (now burned down) Glen House. The rest of our vacation days we spent in a surrey wagon, starting early and coming in late, all day in the cool air, all day breathing the fragrant foliage evaporation. We drove away from houses, hotels, and got alone where silence reigned, where the only rustle was of the leaves of the trees; there, as the old Scotchman said, we took time to pause, to make our souls. The hurry, the bustle, the vulgar show, the bad smells of the city, were gone for a moment, and we had halcyon hours alone in the deep, deep forest, noiseless and free from human contact.

North Conway and Intervale, New Hampshire, are lovely spots for meadow land. Intervale is the focus spot for the big hills; from there, as from a window, they rise into right royal view. We exhausted all the rides, going to Bridgeton, Maine, passing through Fryburg, Maine, when the eight or ten days, all too short, came to an end, and we must go home. We took the cars across New Hampshire and Vermont, reaching Burlington, Vt., a most beautiful city. A ride of five hours around Burlington, revealed lovely views and cultured residences by the hundred. Thence we sailed down Lake Champlain to Ticonderoga to visit the graphite mines, and a gasoline launch awaited our coming at Lake George. These fair spots are known to all, and a simple reminder will bring into view high mountains, blue water, gay boats, fascinating skies and lovely sunsets.

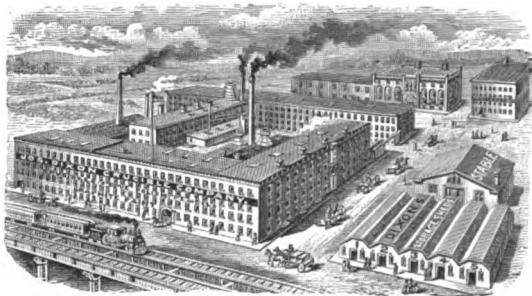
It was a very pleasant week. We liked everything we saw. We went only where we willed, and saw only that which was fair and fascinating.

It was a pleasant vacation time, and the only fault was it was all too short, all too soon over.

JOHN A. WALKER.

ESTABLISHED 1827.

INCORPORATED 1868.



JOSEPH DIXON CRUCIBLE CO.,
JERSEY CITY, N. J., U. S. A.

SALESROOMS AT

68 Reade St., New-York. 1020 Arch St., Philadelphia.
304 Market St., San Francisco. 26 Victoria St., London.

RESIDENT REPRESENTATIVES AT

Boston, Chicago, St. Louis, Pittsburg, Paris, Hamburg, Vienna,
Amsterdam, Brussels, Berlin, Dresden, Milan, Lisbon, Copenhagen,
Warsaw, Barcelona, Bergen, Horgen Switzerland, Finland.

GRAPHITE MINES AND MILLS AT TICONDEROGA, N. Y.
CEDAR MILLS AT CRYSTAL RIVER, FLA.

OFFICERS:

E. F. C. YOUNG, JOHN A. WALKER, GEO. E. LONG,
President. *Vice Pres. and Treas.* *Secretary.*

JERSEY CITY, N. J., November 1901.

WILLIAM MCKINLEY.

One of the prizes of life is a timely death. A good wife, happy children, good health, a fair competence, are other prizes, but as we must all die, a timely death is one of the highest prizes.

This prize Wm. McKinley won. The summons to pass away from earth came at the proudest moment of his great career. Let us forget the rough method of the assassin and think of the useful life closed at its zenith of usefulness. 1893, 1894, 1895, 1896 were hard and trying years; lean and profitless years; years of losses, of idleness, of trouble, of distress. With McKinley in 1896 the star of hope rose. Something touched the springs of industry and the fountain gushed, and with unprecedented volume. 1897 was better; 1898, better still; then came the glorious 1899 and 1900, and still the end is not yet in the closing months of 1901. McKinley was at the helm—discreet, shrewd, far-sighted; avoiding debate, avoiding controversy, he steered the ship into prosperous seas and at its height, while the tide still rises, while the new life and the new hopes of the nation still throb with prosperous advance, and at the zenith of his career, personally in the fulness of his successes of his years, of his official and personal power, he is called away and the helm passes to another. A great career is closed. He won the greatest prize—the prize of a timely death.

J. A. W.

A GRATEFUL NEWSPAPER MAN.

Very often a hard-worked editor gets tired of the ink-pot, or a miserable specimen of lead pencil which he may have gotten hold of, and he writes to the Dixon Company,

"Have you a smooth, easy-writing pencil, suitable for soft paper?" We usually have at hand a pencil or two suitable for editors' use and we send same. The following is a fair specimen of what the recipient writes us:

DURANGO, COLO., August 30, 1901.

"*Joseph Dixon Crucible Company, Jersey City, N. J.*

"Gentlemen:—Permit me to acknowledge the receipt of your very elegant assortment of pencils, which you in your kindness of heart saw fit to send me. For real, genuine enjoyable satisfaction, good pencils rank right up alongside of good graphite, and either bearing the name of 'Dixon' is certainly all that could be desired.

"I appreciate your very generous and wholly unexpected gift all the more because of the fact that such an assortment of pencils and crayons could not possibly have been obtained in this market at any price. The 'Benson' den is certainly most perfectly equipped for the next year with strictly up-to-date 'things to mark with.'

"Thanking you most heartily for your kind remembrance, and trusting that the house of Dixon may continue to enjoy its unequalled high reputation throughout the entire new century, I remain,

"Most sincerely yours,

DIXON'S FLAKE GRAPHITE THE ONLY ONE SUITABLE FOR LUBRICATING, SO FAR AS AN ENGLISH AUTHORITY KNOWS.

Mr. J. S. V. Bickford, Camborne, Cornwall, in writing on superheated steam and lubricating oils in *The Engineer*, of London, says in issue of August 16th: "It should be pointed out that there are very few graphites on the market in the least suitable for lubrication except in very rough work. The only one with which I am personally acquainted is that sold by the Joseph Dixon Crucible Company as 'Pure Flake.' I have had this chemically examined, and what is not carbon appears to be mica, and the residue after firing in a muffle seems still to possess high lubricating qualities. This graphite is the only one which appears to feed well from a graphite lubricator."

"The Lunken Valve Company, of Great Dover Street, makes a sight feed lubricator for graphite which feeds dry graphite perfectly with superheated steam, as I have proved. I have not yet found a lubricator of the sight-feed type which will satisfactorily feed graphite and oil mixed."

EDUCATION.

A man is educated, says Minot J. Savage, D. D., in "Success," who is so trained in his perceptive faculties, in his analytical powers, so trained in all his abilities of one kind and another that, put him down in the midst of difficult surroundings, he will be able to see where he is, able to understand what the occasion calls for, and be able to master his conditions instead of being overwhelmed by them. The man who can master himself, and master his surroundings, wherever he may be, only give him a little time—he is an educated man. And the man who is the victim of his conditions and surroundings, with no practical ability or power, may know ever so much, but he is not educated.

Useless knowledge, then, is not education. Practical, live and comprehensive command of one's abilities, and the full development of one's native resources, constitute the true education. As an illustration, perhaps I may be pardoned for telling a familiar anecdote that illustrates the point I have been trying to make.

THE BOATMAN AND THE LITERARY MAN.

It is said that a man was being carried across a lake somewhere in the Old World by a boatman, and that this gentleman was a puffed-up and conceited scholar and literary man. He fell into conversation with the boatman, and said to him: "Have you ever studied philosophy?" When the answer came, "No," he said: "Then a quarter of your life is lost." Then he said: "Did you ever study science?" The answer being the same, he replied: "Then another quarter of it is lost. Do you know anything about art?" "No." "Well, then another quarter of your life is gone." Just then a violent squall struck the boat, and the boatman turned and said: "Sir, can you swim?" "No," came the answer. "Well, then," the boatman replied, "the whole of your life is lost."

The one thing of first importance is to be able to swim in whatever sea you may be plunged.

THE RELATIONS OF OIL AND GRAPHITE.

The relations of oil and graphite are of the most friendly kind. Both can go it alone, but each does its best work when helped by the other, except in very special cases. In all ordinary practice five to ten per cent. of graphite, if it is of Dixon's pure flake graphite, will largely increase the lubricating value of the oil. This is equally true of any grease. Take the very best lubricating grease you can find. Test it on bearings, then add a little of Dixon's pure flake graphite and you will find that the grease and graphite will do six times more work than the grease did when used without the graphite. This has been demonstrated. It is a fact. Locomotive engineers throughout the country know how much further both engine oil and valve oil will go when Dixon's pure flake graphite is added. Oil is affected by heat and cold, while graphite remains unchanged, no matter how great the heat or cold may be. Oil gums while graphite never gums or gets sticky.

For cooling rod pins and hot boxes, there is nothing equal to Dixon's pure flake graphite.

Graphite mixes readily with oil, but is liable to settle, so should not be allowed to stand in oil cup. The time may not be far away when no railroad will be without a supply of Dixon's pure flake graphite for its engineers and machinists. Few are now.

"Of all the ages ever known,
Of brass or bronze, of brick or stone,
The blackest and the worst, I think,
Is this pestiferous age of ink."

—Wade's *Fibre and Fabric*.

The twentieth century, Bro. Wade, will, very likely, see a larger use of lead pencils.—*Editor "Graphite."*

THOREAU PENCILS.

A curious discovery was made in Concord, Mass., recently. In the attic of the Thoreau homestead was found a quantity of lead pencils all bearing the stamp "Thoreau & Son," says *Fibre and Fabric*. The naturalist and his father once made lead pencils for a living, and for years a great store of their completed product was hidden away just under the ridgepole of the homestead. The pencils to-day are in demand for other purposes than writing.

—*The Stationer and Printer.*

The Dixon Company have one or two of these pencils in their curiosity shop.

A PACIFIC COAST SHIPMENT.

A few days ago we made a shipment to our San Francisco branch of 14 big double truck-loads of graphite productions. The total weight was 85,000 pounds, which was made up of 691 packages.

DIXON'S CUSTOMERS.

As GRAPHITE reaches many of them, it is perhaps in order to say that we are proud of them.

They constitute the elite of the buyers in our line in the world. They buy shrewdly, prefer good goods, appreciate improvements, are willing to pay fair prices for goods that deserve a fair price, and they pay their bills promptly.

'Rah for Dixon's customers!'

J. A. W.

GRAPHITE IN THE EDISON STORAGE BATTERY.

The object of employing graphite is to offer a great extent of surface, against which nearly the whole of the oxide is in contact, this being necessary since the electrolytic reduction and oxidation do not extend to a great distance from the conducting surface, against which the oxide is in contact, although the higher oxides of nickel and cobalt seem to be conductors. Graphite is neither affected by electrolytic oxidation, nor is there local action between it and the oxides.

CONCERNING BELT DRESSING.

The following letter explains itself and is a pleasing testimonial to the fact that very many buyers are generous enough to speak well of an article that they are purchasing, and not seek to somewhat belittle an article with the hope of getting a better price:

SPRINGFIELD, O., July 29, 1901.

Joseph Dixon Crucible Company, Jersey City, N. J.

Gentlemen:—The writer, who was for some years the managing Superintendent of The Foos Mfg. Co., of this city, remembers having used your belt dressing with considerable satisfaction, and as we are now in need of some dressing, we will thank you to please send us at once about 40 lbs. of this belt dressing. You may ship this by freight and oblige, yours truly,

THE AMERICAN ENGINEERING COMPANY,
J. F. WINCHELL, V. P. & Gen'l Mgr.

WHAT WE DO FOR THE AUTOMOBILE.

The automobile is a self-propelled business or pleasure carriage. The three distinct types are the steam-carriage, the electric vehicle, and the internal combustion engine. Each has its advantages and its disadvantages, but all three types are equally dependent on the proper working of their running parts.

Furthermore, in all three types is it really desirable to waste as little power as possible, and to do this, the running parts must not only run properly, they must also run smoothly and with the least amount of friction. For the best results, and for the greatest amount of pleasure to the occupants, the automobile must be treated as a machine,—the same as the locomotive or the stationary engine.

The power transmission between engine and axle is commonly by chain and sprocket, with a differential gear on the axle. To prevent rust and wear and to save power, all chains and gears should be lubricated with some form of graphite lubricant. It is graphite—Dixon's Pure Flake Graphite—that has proven most satisfactory for the chains of bicycles and for all types of machines up to the mightiest steam locomotive that rushes along at more than a mile a minute.

Dixon's Pure Flake Graphite is prepared in various ways so as to make it suitable for the running and wearing parts of all the different types of automobiles. There is no substance that can equal it as a lubricant, and it is generally used on all power machinery, large or small.

We have very many most flattering letters from people who have made tests of Dixon's No. 635 Graphite or Dixon's Graphitoleo, or Dixon's Graphite Pipe-Joint Compound, which we shall from time to time republish in *Graphite*. We already have them in pamphlet form.

In the meantime we offer the following letter as a good sample:

CENTRAL PASSENGER ASSOCIATION.

OFFICE OF THE COMMISSIONER.

8th Floor Monadnock Bldg.

F. C. DONALD, Comm.

C. A. FOX, Sec.

Chicago, September 2, 1901.

MR. DUDLEY A. JOHNSON,

Dixon Crucible Company, Chicago.

My dear Mr. Johnson:—

After something more than a year's practical struggle with the coming means of locomotion,—in an amateur way, of course,—I have, under expert mechanical advise, exhausted all known expedients, and some new ideas withal, in my efforts to successfully operate a motor vehicle propelled by the hydro-carbon system. Early in my experience with this partially developed means of energy I was impressed with the fact that adequate lubrication was a primal and essential necessity, and after patiently and carefully trying out conventional methods with a meagre degree of success, I began experimenting with the several forms of graphite prepared by your Company. Immediate results were so pleasing that, with the exception of continuing the use of a heavy mineral oil in the cylinder of the motor (graphite

being interdicted by reason of the ignition being of the "wipe" spark order) I used Dixon's Graphite Grease, No. 687, for all bearings in the vehicle, including the ball-races in the forward wheels and the roller-bearings in the rear. With the exception of the two latter, graphite is fed through compression grease cups, affording a positive, economical, cleanly and automatic means of reaching the bearing surfaces.

Saving a turn of the compression cups, following a run of twenty or thirty miles, I have, since adopting the graphite, found no occasion whatsoever to give any thought to the question of lubrication. The bearings and hangers of the engine-shaft and the counter-shaft carrying the transmission gear are rigidly and immovably aligned; therefore occasional examinations for indications of heat are from habit rather than necessity. This applies equally as well to the friction plates, clutches, and chain.

In April last I packed the ball-races and roller-bearings with your graphite, and on taking off the wheels for examination a few days since, I found every ball and roller in perfect condition, and simply replaced them, after inspection, without renewing the graphite. Before, in using oil and grease, I was frequently obliged to take off the wheels and replace broken or bruised balls.

Your composite preparation of graphite and sawdust, No. 688, has not only proven a perfect lubricant for the gears and pinions of the transmission, but has effectually stopped the whirring noise and consequent lost motion in the meshing.

I am very glad to make this statement of the excellent results obtained through the use of your preparations. As you will understand, I am relieved of much of the anxiety heretofore attending and to that extent diminishing the pleasure I find in the use of my carriage. I wish, moreover, to cordially thank you for your kindly interest and valuable suggestions in successfully solving this vital feature of the operation of the motor vehicle.

Yours very sincerely,

(Signed) F. C. DONALD.

Those visiting the Automobile Exposition at Madison Square Garden, New York, November 2 to 9, should not fail to see the Dixon exhibit.

A GOOD CRUCIBLE AVERAGE.

We have reports from one large concern in Baltimore of an average run on Dixon Crucibles, in the month of June, this year, of 33 heats; average of July, 35 heats; average of August, 38 heats. These were in a carload shipped in June.

We have a second report from a brass foundry in Philadelphia, saying in the last nine years they have used all makes of crucibles, and Dixon's at the present time beat anything they ever had. The last ones, size No. 80, averaged 42 heats.

This ought to be so, because the Dixon Company is using the best materials that skill can select and money can buy, paying more for the stuff in order to get good stuff, and sparing no pains in any way, shape or form, in every detail of manufacturing.

GRAPHITE

Title pages for volumes for 1901 to 1907
(inclusive) cannot be supplied.

Advertising Department,
June 16, 1908.

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Graphite

VOL. IV.

DECEMBER 1901.

No. 1.

Issued in the interest of Dixon's Graphite Productions, and for the purpose of establishing a better understanding in regard to the different forms of Graphite and their respective uses.

COPYRIGHTED BY THE JOSEPH DIXON CRUCIBLE CO., JERSEY CITY, N. J.

THE AUTOMOBILE SHOW.

The representative of the Dixon exhibit at the Automobile Show held in New York November 9 to 16, owns up like the good "Bishop" he is, that in all of his show experience, including a hundred days at Chicago World's Fair in 1893 and at the leading bicycle, electric, railway and other exhibits since, he has never seen anything to equal the hard questions fired at him by those in attendance at the automobile show.

Pointing at a woman who had passed on he said : "Do you see that woman ? Well, that woman knows all about both gasoline and steam engines, and when she was asking me about how to introduce graphite into a gasoline cylinder, and if the graphite would short-circuit the terminals at end of sparking plug,

I was ready to lay down, and I don't wonder the man in the next booth had the nose bleed for hours, for I thought my head was off a dozen times.

it was a great show for Dixon's, for it demonstrated 'act that all who successfully run their machines, no r what kind, use Dixon's graphite."

FATE OF THE PROUD CEDAR.

re was once, not far away, some cedar and rubber s. Among them was a young cedar, who was called fess Vanity," because of her proudness. But a rubber ee who stood opposite her was, on the contrary, very shy nd modest.

Now, a band of men were working at a lead mine a short nstance away, and its product was nearly exhausted.

, one day when the men were passing the trees they d to each other, "The mine is almost deprived of lead, t when it is we will cut down these trees."

he rubber tree shuddered, but the cedar braced up and d, "See, they said they are going to cut you down, and I shall remain. Then you shall be flattened out for the ends f pencils and other things."

"Never mind," said the rubber tree, "I am and shall be intent."

A few weeks later the men came with their axes, and, before they were aware of what was happening, they were cut down.

It was the fatal day when they were carried off in a wagon to a building called a "pencil factory." Soon the cedar, before it came to its senses, was in a large machine and came out a round piece of wood, with a hole in it, then a long stick of graphite in it and a piece of that rubber which it used to quarrel with at the end.

It was soon sold to a dealer.

One day as I entered a stationery store, intending to purchase some school supplies, I admired this pencil in particular. I purchased it, sharpened it and wrote this story with it.

ESTELLE BRIGHTON,
New York, N. Y.

But when the rubber tip saw the golden words, "DIXON'S AMERICAN GRAPHITE" stamped into the cedar wood, below her, she felt very proud of her new position, and looked down upon her.

POSTSCRIPT BY A NEW YORK BOY.

THE GOOD OLD TIMES.

We hear much about the good old times, the present is undervalued in the review of the past.

Let us see—when the Roman Empire was in its glory it was a social sin and crime to be poor. It was a disgrace to accept money for work done, work was relegated to white slaves, the money and the wealth used by the few, the masters, guilds and craftsmen, except among slaves disappeared; to be a coppersmith, a potter, a carpenter, was to be despised, \$100,000 was considered then the beginning of riches, and a half million a princely fortune.

"Good old times," indeed, the sun never shone on better days than those we enjoy, and better ones are to come.

J. A. W.

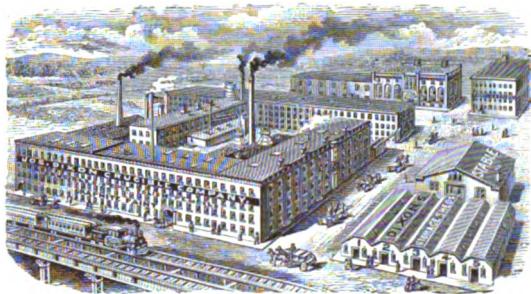
GRAPHITE FOR POWER LAUNCHES.

"Yours of the 11th at hand. I received sample of Dixon's No. 635 Graphite and printed matter. I used the graphite with the cylinder oil and it does the *trick*. I have a 1½ H. P. high speed engine in my launch. Before using your graphite the engine made a humming all the time and required continual oiling. In fact, the bottom of the boat had a thick covering of oil.

After I used the graphite the engine moved smooth and almost noiseless. I am using about one quarter the amount of oil and can keep the boat clean. I shall talk it over with the boys at the lake."

ESTABLISHED 1827.

INCORPORATED 1868.



JOSEPH DIXON CRUCIBLE CO., JERSEY CITY, N. J., U. S. A.

SALESROOMS AT

**68 Reade St., New-York. 1020 Arch St., Philadelphia.
304 Market St., San Francisco. 26 Victoria St., London.**

RESIDENT REPRESENTATIVES AT

**Boston, Chicago, St. Louis, Pittsburg, Paris, Hamburg, Vienna,
Amsterdam, Brussels, Berlin, Dresden, Milan, Lisbon, Copenhagen,
Warsaw, Barcelona, Bergen, Horgen Switzerland, Finland.**

**GRAPHITE MINES AND MILLS AT TICONDEROGA, N. Y.
CEDAR MILLS AT CRYSTAL RIVER, FLA.**

OFFICERS:

**E. F. C. YOUNG, JOHN A. WALKER, GEO. E. LONG,
President. Vice Pres. and Treas. Secretary.**

JERSEY CITY, N. J., December 1901.

DIXON'S No. 635 GRAPHITE FOR MOTOR CYCLES.

Dixon's No. 635 Graphite is a very finely powdered flake graphite, peculiarly suitable for lubricating small gasoline motors. So far as the manner of using is concerned, we cannot do better than to print the following letter which comes to us from one who has made use of it:

"I used Dixon's No. 635 Graphite in connection with oil in engine and in this way: I have a small rubber hose or tube the same as is used in atomizers. Into one end of the tube I force a quill—an ordinary toothpick quill—and by pushing the quill into the graphite two or three times the quill is easily filled. Then I unscrew the sparking plug of the engine and push the quill end of rubber tube through the expansion chamber down into the cylinder, having first put the piston head to its lowest point; then putting the end of the tube in my mouth, with a light puff of air I discharge the graphite into the cylinder, which being oily gets an even deposit all over the bearing surface.

"This I do each day before and after the day's riding, and the result is a perfect condition of the engine at all times.

"This method may appear to many as a somewhat troublesome job, but it is not, and not more than two minutes is consumed in the operation.

"I use Dixon's Graphitoleo in the gear cases immediately under the sparking arrangement on the side of motor. With the cogs and eccentrics working in a mass of this lubricant, wear is imperceptible and friction is too small a matter to consider. My engine works beautifully under this treatment."

We shall be glad to send sample of Dixon's No. 635 Graphite to any user of a motor cycle.

THE BEECH TREE. SECRET.

BY GEORGE E. LITTLE, Washington, D. C.

The smooth-barked beech tree softly sighs;

I'm tempted to the lover's eyes.

I know somewhat of Cupid's ways,

And secrets too of olden days.

Beneath my branches bending low,

Two schoolmates came long years ago,

Courted and quarreled as lovers do.

At last he boldly said, "You'll be my bride,

And sometime we will wed."

She answered with her downcast eyes

And bowed her head.

A silent witness of me they make,

And carve their pledge upon my side,

Names and ages too, likewise the date.

Years after on a summer's day,

They came again with numerous family.

I knew them, though they'd grown quite gray,

Careworn faces too, had they,

Caused by toil and responsibility.

Suddenly I heard a shout,

And looking down right near my feet,

A bright eyed girl with face so sweet

Exclaimed, "Here's grandpa's name, and grandma's too."

Then joyously began to shout,

"We've found them out! We've found them out!"

Soon came an anxious crowd to see,

An aged couple leads the way,

Grandma says, "Yes, that's the tree,

And well remember I the day."

Of glasses now, they've need of none,

During the years the names have grown,

Says grandpa, "What's this fuss about?"

The answer came with laughing shout,

"We've found them out! We've found them out!"

NUMBER OF WORDS IN A LEAD PENCIL.

"I have been figuring on the possibilites of a lead pencil," said a young man who has a penchant for the statistical side of things, and you would really be surprised to know what a man can do with one lead pencil. How many words are there in a lead pencil? How many columns of newspaper matter? How many pages of a book of the average size? How many poems, essays, sermons and things of that sort may one find in the lead of an ordinary pencil? Really, these questions are not easily answered, but one may arrive at a reasonable approximation by doing a little sum in arithmetic.

"In the first place, the average pencil is seven inches long. The average diameter of the pencil used by men who write a great deal is one-twelfth of an inch. Considering the wood and lead the point of a pencil measures about one-half of an inch, one-quarter of an inch representing the lead portion. Allowing for breaks and scratches, one-quarter of an inch of lead will write two columns of matter for the ordinary newspaper, assuming that the pencil is not of the extremely soft character. There are about 1,800

words in a full column of a newspaper of the average size. Two columns would represent 3,600 words. So we get this number of words out of one-quarter of an inch of lead. Out of an inch of lead we would get four times 3,600, or 14,400 words. Out of seven inches we would get 100,800 words. So far as the number of words is concerned we have in this result the possibilities of the lead pencil. Allowing 1,800 words to the column, this would mean 56 columns of solid matter, or an eight-page paper of seven columns."—*New Orleans Times-Democrat.*

GRAPHITE BRUSHES FOR MOTORS.

BLACKALL & BALDWIN,

SELLING AGENTS FOR THE CROCKER-WHEELER COMPANY,
ELECTRICAL ENGINEERS AND MANUFACTURERS OF
GENERATORS, MOTORS, DYNAMOS, AND
SPECIAL TYPES OF ELECTRICAL
MACHINERY.

P. O. Box 267.

39 Cortlandt Street,

NEW YORK CITY, Oct. 28, 1901.

Joseph Dixon Crucible Co.,

Jersey City, N. J.

Gentlemen—We have been using in our shop in this city, and have applied to generators and motors sold by us, the graphite brushes manufactured by your Company, and it affords us much pleasure to state that their performance has been entirely satisfactory to us.

Our applications of these brushes have been so many, and the conditions of service which they have been required to meet have been of such varied character, that we have been enabled to arrive at a very accurate conclusion as to their value, and it is our present opinion that your graphite brushes are superior to any other of the kind that we have tried.

While the cost of graphite brushes is considerably greater than that of carbons, we advocate their use in all cases where they can be applied, and it has been our experience that the saving in commutator wear more than equals the excess cost of brushes and renewals.

If it were possible for you to produce and place on the market graphite brushes that would be slightly harder and having a resistance as low as carbon, it is our belief that your product in this line would supplant the carbon article entirely.

Yours very truly,

BLACKALL & BALDWIN,

F. S. BALDWIN.

POLLY AND THE PENCIL.

Polly sat drawing at her little desk,
A thoughtful wrinkle on her baby brow;
She drew an animal of form grotesque,
And calmly stated, "Antie, that's a cow."
"It is, indeed, a charming cow," I said;
"But cows have legs, and yours has none,
my pet;"
"I know," said Polly, nodding her wise head;
"But, antie, they are in the pencil yet."

—Carolyn Wells in *Youth's Companion.*

Productions of the Dixon Crucible Co.

Dixon's Black-Lead Crucibles and Retorts.

All sizes and for all purposes. Bowls, Dippers, Stirrers, Stoppers, Nozzles, Muffles, Sleeves, Etc.

Dixon's Brazing Crucibles.

Made in several shapes for dip-brazing.

Dixon's Graphite Boxes and Covers.

For baking carbons and filaments for electric lighting.

Dixon's Fine Office and Drawing Pencils.

Unequalled for smooth, tough leads and uniformity of grading.

Dixon's Colored Crayons.

In wood or solid. For schools, railroads, editors or factory.

Dixon's Lumber Leads.

Black or colors; for green or dry lumber.

Dixon's Felt Erasive Rubber.

For erasing pencil marks, type-writer work, or ink.

Dixon's Carburet of Iron Stove Polish.

The old reliable; in cake or bulk form.

Dixon's Pure Flake Lubricating Graphite.

A solid lubricant for all frictional surfaces.

Dixon's Special Graphite No. 635.

For lubricating cylinders of gas engines and all close or delicate mechanical parts.

Dixon's Electrotyping Graphite.

Used by the majority of practical electrotypers of this country.

Dixon's Hatter's Lead.

For coloring hat bodies.

Dixon's Plumbago for Shot Polishing.

Dixon's Plumbago for Powder Glazing.

Dixon's Plumbago Foundry Facings.

Dixon's Yacht Plumbago.

For lubricating and smoothing bottoms of yachts.

Dixon's Graphite Waterproof Grease.

For gears, wire ropes, hoisting chains and general machinery.

Dixon's Graphite Axle Grease.

Better and cleaner than castor oil for trucks, wagons, carriages.

Dixon's Graphited Wood Grease.

For use on trolley car gears which are enclosed in a gear case.

Dixon's Graphited Oil.

For use in all places where the use of a grease is impracticable.

Dixon's Graphite Cup Greases

For use in cups or open bearings, on spindles, shafting, etc.

Dixon's Oiled Graphite

Dixon's Lubricating Compound No. 688.

For enclosed gears of electric automobiles.

Dixon's Silica-Graphite Paint.

For metal or wood-work, roofs, bridges, telegraph and trolley poles, smoke-stacks, boiler fronts, and iron construction work.

Dixon's Graphite Pipe-Joint Compound.

For steam, gas and water piping, smearing gaskets and flanges.

Dixon's Cycle Chain Graphites.

For perfectly lubricating chains and gears of bicycles.

Dixon's Graphitoleo

For lubricating bicycle chains, sprockets, pivots and pins; gun locks, and for general use.

Dixon's Commutator Graphite

Will glaze the commutator with the finish so much desired by electrical engineers.

Dixon's Anti-Flux Brazing Graphite.

To prevent the spelter from adhering when brazing.

Dixon's Crucible Clay and Graphite Mixture.

For lining and repairing furnaces and fire boxes.

Dixon's Stove Cement.

For repairing stove or range lining.

Dixon's Traction Belt Dressing.

For preserving leather belts and to prevent slipping.

Dixon's Solid Belt Dressing.

Convenient for those who prefer a solid dressing.

Dixon's Graphite Resistance Rods.

From one-eighth to one inch diameter; any resistance required.

Dixon's Graphite Products for Electricians.

Special circulars with detailed information sent on request.

HOMELY RELATIVES OF DIAMONDS.

The closest relative of the diamond is a smooth black substance called graphite, says a writer in *St. Nicholas*. In one form you handle it every day, for graphite is used in making lead pencils. Gas carbon is a cousin of the diamond, and is obtained, as you might imagine from the name, in the process of making gas. Only three things come from bituminous coal—gas, coal-tar and coke. Gas carbon is another name for coke. The diamond gives exquisite sparkles of light, but it gives only the pleasure of possession. Its sober-hued cousin, coke, affords broad beams of light, making the path of night easy to travel and lessening the crime that used to prevail in dimly lighted streets, for from coke the long black pencils, or "carbons", used in arc lights are made.

LUBRICATION OF GAS ENGINES.

Users of gas engines often complain of what they are pleased to call the "cussedness" of their engines. There are times, usually at the time of starting, when the engine refuses to start, and there seems to be no reason why. The following letter from J. A. Sandares, of New Haven, Conn., is worth careful reading and consideration by all who have a gas engine:

"Your favor in regard to graphite is at hand. In reply I would say that I would not now (after using Dixon's No. 635 Graphite) attempt to run a gas engine without it. My engine stands in a cold place, and in using the heavy cylinder oil on a cold morning, it was a hard job to get started, as the oil acted as so much glue. I now use a light oil with graphite (just enough to darken the oil) and I will say that in the two years I have run this engine it has never run so smooth and as even as it does now, and on a cold morning there is no trouble in getting started. I would not be without it if it cost \$2.00 a pound, as I do not now use one-third the oil formerly used, and have three times the satisfaction. The graphite I am now using I got from New York by messenger, as there is none of the No. 635 here. I have spoken to Spencer & Matthews Co. about it and they said they would write you about this number as they carry about all the other numbers. I have also recommended it to other parties who are using only oil and I think they will be satisfied."

"I would be pleased to receive some of your circulars which I wish to give to my friends, so that in reading they may know and in using they may see what a good thing they are missing."

NEW ENGLISH.

The School Journal of New York says: To begin with, there is a "new English." It is not yet taught in the schools. Most of the English composition of to-day is based upon models of the style of preceding generations. Children in grammar schools and high schools are given as examples of good English, Irving, Hawthorne, Scott, Addison, Swift, even Shakespeare. Their essays are largely literary reproductions, in the language used by these authors—a noble language, indeed, and worthy of the attention of the cultivated, but not the language of to-day.

Whatever is not directly to the point is in the best writing of to-day lopped off. Adjectives and adverbs are

stricken out; paragraphs have grown shorter and shorter; everywhere condensation is the rule. English, a language that is, by virtue of its gothic traditions and inheritance, naturally adapted to the ornate and overloaded style, has become as simple and terse as French. The style that is in favor to-day is strong and strenuous.

Such language is wanted everywhere. The gift of it is desired not merely in professional literary people but in the ordinary man of business. The ability to put a proposition forcibly and concisely, whether in writing or in speech, is worth money to the possessor. Time never was when clear expression of clear thinking cut so much figure as at present.

THE NOZZLES OF FIRE HYDRANTS.

Dixon's Waterproof Graphite Grease has been most successfully used for several years for lubricating the nozzles of fire hydrants.

The use of this graphite grease makes it possible to open fire hydrants with perfect ease in the coldest weather. This is of the greatest importance in cases of fire where every moment counts so greatly. The following letter is an example of the usefulness of this lubricant:

Joseph Dixon Crucible Company, Jersey City, N. J.

Gentlemen:—I have used Dixon's Waterproof Graphite Grease for lubricating the nozzles of our fire hydrants for the past two years. One application doing for that period.

Heretofore the nozzle caps gave much trouble in sticking, sometimes requiring considerable strength to remove them.

Your grease has entirely obviated this trouble.

My attention has never been called to this use of graphite grease before.

Yours very truly,

JAMES F. FORBES,

Dist. Supt.

THE DENNISON WATER SUPPLY COMPANY,

Dennison, Ohio.

In the current issue of the *World's Work*, Hon. Carroll D. Wright, chief of the Labor Bureau in Washington, discusses the industrial advance in America and gives some striking statistics illustrating the remarkable progress made by this country during the past decade. Mr. Wright says that the number of manufacturing establishments in this country in 1890 was 355,415, while the schedules of the census of 1900 show 653,000 manufacturing establishments in operation last year, making a net gain of nearly 300,000 establishments engaged in the manufacture of goods. The total value of products in 1890 was \$3,372,437,283, while a very conservative estimate of the value of all products in 1900 places it at not less than \$15,000,000,000. This is a magnificent statistical showing of industrial progress which cannot be paralleled by any country in the world.—*Iron Age*.

Father—Where is your mother, Johnny?

Johnny—She's out in the back yard cutting wood?

Father—Are you sure she's cutting wood?

Johnny—Yes, sir; she's trying to sharpen a pencil.

—*Silicate News*.

Graphite

VOL. IV.

JANUARY 1902.

No. 2.

Issued in the interest of Dixon's Graphite Productions, and for the purpose of establishing a better understanding in regard to the different forms of Graphite and their respective uses.

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FOREIGN VISITORS.

One day last month the Dixon Company received a call from Mr. F. D. Phinney, representing the American Baptist Mission, Rangoon, Burmah; the gentleman was desirous of seeing the operation of pencil making, as the Rangoon Mission has handled the Dixon pencils for a number of years. He was made welcome.

Later in the day a call was received from Mr. Arnold Hockley, of Hockley & Co., Maryborough, Queensland. He too had heard so much about the Dixon pencils that a visit to the manufactory was on his list of interesting places.

He was particularly enthusiastic and said he would rather go through the Dixon works than pass the same length of time at the theatre.

The visits of these gentlemen, representing the remote parts of the world, give evidence of the far-reaching popularity of the Dixon products.

A MUNCHAUSEN LETTER.

My Dear Graphite:—

Knowing that you are interested in everything connected with Dixon's Silica-Graphite Paint, I beg to submit the following experiences of my amiable friend, Bert Skinner.

Bert Skinner sold a ten pound can of Dixon's Silica-Graphite Paint to James N. Tice, of Salaam, Victoria County, Nebraska, early in the spring of '28. This he used and no other on his window sashes, and last week it was necessary to renew the windows, as the glasses had been completely worn away. The window-maker advised him to use the same sashes again, as they were in such fine shape and condition.

Again, says Bert Skinner, take his own case. He had his house painted both inside and out, with Dixon's Silica-Graphite Paint. His youngest, "Little Willie," started a bonfire in the nursery. Before the fire department could arrive, all the furniture, carpets, bedding, etc., were consumed. Judge the surprise of the insurance adjustors and Bert Skinner, while they were both running up the front stoop, at their both falling through, the wood in and about the building having been totally consumed, leaving a stout

coating of Dixon's graphite paint, and it was only after tiptoeing carefully, that the second floor was reached.

Of course the insurance was settled in full and Bert Skinner lived in the house until early the next spring, when on the arrival of his mother-in-law, he happened to hurriedly slam the front door and thus the whole building was shattered, and he was afraid to risk staying in the house during the heavy spring rains. Of course, Bert Skinner adds that he can't blame you or your Silica-Graphite Paint for this.

He is now having a new house built and all chairs, carpets, bedding, etc., as well as the house, are to have two coats of Silica-Graphite Paint, (both inside and out) and he, Bert Skinner, now asks me in turn to ask "Graphite" if you think it necessary for him to carry an insurance on his new building, considering the precautions against fire which he has taken.

Very respectfully yours,

A. L. H.



THE BUSY BEE.

How doth the busy bee
Improve each shining minute?
Selects a spot on you or me,
And jabs his stinger in it.

—Philadelphia Press.

DEPARTMENT STORE REPARTEE.

"What are these things?" asked the customer.
"Blackboard erasers," said the shopgirl.
"I don't want anything that will erase a blackboard. I want a chalk mark eraser."

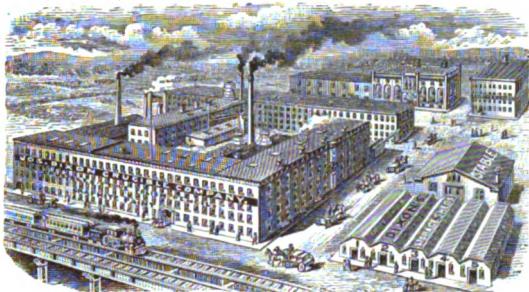
"That's what I meant. These are chalk mark erasers. Anything else?"

"Yes. I wan't some lead pencils."

"We haven't any lead pencils. We have some wooden cylinders with graphite on the inside of them. Will they do as well?"—*Chicago Tribune*.

ESTABLISHED 1827.

INCORPORATED 1868.



JOSEPH DIXON CRUCIBLE CO.,
JERSEY CITY, N. J., U. S. A.

SALESROOMS AT

68 Reade St., New-York. 1020 Arch St., Philadelphia.
304 Market St., San Francisco. 26 Victoria St., London.

RESIDENT REPRESENTATIVES AT

Boston, Chicago, St. Louis, Pittsburg, Paris, Hamburg, Vienna,
Amsterdam, Brussels, Berlin, Dresden, Milan, Lisbon, Copenhagen,
Warsaw, Barcelona, Bergen, Horgen Switzerland, Finland.

GRAPHITE MINES AND MILLS AT TICONDEROGA, N. Y.
CEDAR MILLS AT CRYSTAL RIVER, FLA.

OFFICERS:

E. F. C. YOUNG, JOHN A. WALKER, GEO. E. LONG,
President. *Vice Pres. and Treas.* *Secretary.*

JERSEY CITY, N. J., January 1902.

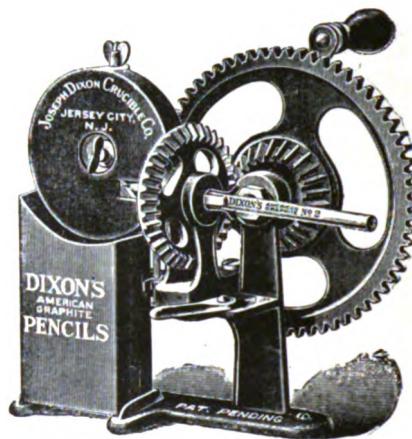
G R E E T I N G

Another year closed. Another greeting time upon us. We wish a happy and prosperous New Year to all in this country, and to all in every other civilized part of the world who have favored us with orders for graphite products. To our Salesmen for their untiring zeal and loyalty, and to our Representatives in Chicago, Boston, St. Louis, Pittsburg, Paris, Hamburg, Vienna, Berlin, Amsterdam, Brussels, Dresden, Milan, Lisbon, Copenhagen, Warsaw, Barcelona, Finland, Horgen (Switzerland), for the orders which have been transmitted through their influence.

We apologize to those who have been subjected to annoying delays by our inability to fill orders with desired promptness, and we have already commenced the erection of extensions to our factories, which will cover 100x200 feet, and which will speedily put us in a position of old-time ability to send out products without delay.

A NEW PENCIL SHARPENER.

After a careful examination and test of the pencil sharpener here illustrated, we have concluded that its many advantages over those of other designs now in use, and its



moderate price, warrant our recommending it. Its good qualities would seem to make this machine nearly perfect, as compared with others.

It sharpens quicker.

It never breaks the lead.

It will not continue to cut into the pencil after the point has been secured.

The knives are reversible, which doubles their cutting capacity.

An extra knife is sent with each machine.

Dull knives will be resharpened for five cents each. New knives furnished for twenty cents each.

This pencil sharpener is the invention of a school superintendent who is thoroughly familiar with the defects of other machines, and who has slowly and carefully designed one which is intended to overcome defects and do away with annoyance. It is simple in construction and practical in use. Price on application.

PUDD'NHEAD WILSON ON CIRCUMSTANTIAL EVIDENCE.



Even the clearest and most perfect circumstantial evidence is likely to be at fault, and therefore should be received with great caution. Take the case of any pencil sharpened by any woman. If you have witnesses you will find that she did it with a knife; but if you take simply the aspect of the pencil you will say she did it with her teeth.

MARK TWAIN.

IN THE SMOKING CAR.

"Here's a good one," said the man from Denver. "What's the difference between a pen and a pencil? Give it up? A pen has to be driven, but a pencil has to be lead. See?"

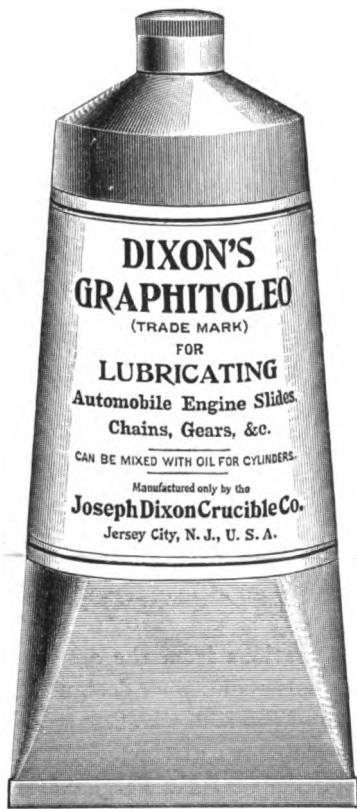
"The automatic bell buoy beats 'em both," murmured a quiet little chap who had got on at Cleveland. "It rights itself."—*Philadelphia Press*.

ON THE SUBJECT OF LEAD PENCILS.

In this age of invention and progress, the faculty of drawing and ability to transmit ideas through the medium of a sketch or design is of great importance. A description of a new device is materially shortened, and much more clearly conveyed, if accompanied by a careful drawing, or even a sketch. This is recognized and taught among the important studies of school work. The demand for illustrated articles in our newspapers and magazines has never been so great, and a cartoon by a clever artist will often turn thousands of votes, where unillustrated articles may not appeal.

Artists of merit are among the highly paid class. Designing and mechanical drawing is profitable, and the man or woman of to-day who can draw is in advance of those whose education has been neglected on this point.

This naturally leads up to the use of proper materials in the education, and the importance of the pencil as the principal and necessary working tool, and just here the peculiar value of the Dixon American Graphite pencils is appreciated. These pencils are the product of the most advanced ideas and choicest material, graded to suit any and all requirements; they are necessities (or it may be said, absolute necessities) as well as luxuries. They have no equals in the pencil making, pencil using world.



DIXON'S GRAPHITOLO,

which is so valuable for lubricating automobile engine slides, chains, gears, etc., is now put up in eight ounce collapsible tubes for autoists. It is on sale by prominent dealers.



ENGLISH AS SHE IS TAUGHT.

PHILOSOPHICAL.

The name of the great philosopher of modern times was called Eureka.

The principle of Diogenes was that he could move the world if he could find a place big enough to stand in.

Franklin proved that electricity and lightning are rods.

Temperature is measured by a machine called a thermometer.

Sun melts ice by the law of cohesion of atoms.

An inclined plane is a plane that inclined.

Drops of water are generally spherical for various reasons known only to the gracious Providence who has formed them.

Affinity is a liking evinced between two objects, contact not being necessary. One person may have an affinity or liking for another.

Capillary attraction is the attraction between hair. A person's hair is affected by fright. The hair of some animals is attracted by lightning.

A body will go just as far in the first second as the body will go plus the force the gravity and that's equal to twice what the body will go.

Specific gravity is the weight to be compared weight of an equal volume of or that that is the weight of the body compared with the weight of and equal volume.

Inertia is that property of bodies by virtue of which it cannot change its own condition of rest or motion. In other words it is the negative quality of passiveness either in recoverable latency or insipient latescence.

The air pump is an instrument used for forcing water into a pump and expelling it by means of a vacuum. It ascends in the water downwards.

The law of fluid pressure divide the different forms of organized bodies by the form of attraction and the number increased will be the form.

By convection the body is heated instantaneous, as gun powder.

The reason a body falls when not supported is that there is not enough air under it to keep it up and so it has to fall or the specific gravity is not great enough to hold it up.

The difference between latent and sensible heat is that it feels sensible.

If you listen closely you can vibrate a pitchfork.

If an experiment be successful the result will be inevitable.

Thermal unit is the heat required to raise a pound of water through one foot.

If we were on a railroad track and a train was coming the train would deafen our ears so that we couldn't see to get off the track.

Tides are caused by the reflection of the sun and moon upon the water.

Sir Isaac Newton founded the "Laws of Gravity."

A simple pendulum is an imaginary point hung on a thread.

The vibrations of a pendulum is determined by the time they take.

A noise is a collection of sounds which means nothing but a clatter.

Sound is that form or motion of the mind which effects the oratory nerves.

A sound is not like a noise because it has essential things to depend upon and a noise has not.

To get gold from its ore it is polished and heated.

Metals are changed in their elements by fusing them together.

ASTRONOMICAL.

A Sidereal day is the time from the sun leaving the sky till he appears again.

The farther the sun is up the longer it takes it to set and the days are longer in summer than when the sun is low down.

The weight of the world is found by comparing a mass of known lead with that of a mass of unknown lead.

To find the weight of the earth take the length of a degree on a meridian and multiply by $62\frac{1}{2}$ pounds.

The size of the earth is found by finding the horizontal parallax of the sun.

Abberation is if we saw a star and shot at it, the shot would not pass through the center but through the side.

The moon is 240 miles from the earth.

The moon's nodes are the corners of the moon's orbit.

The reason for believing there are mountains on the moon is due to the shadows reflected on the earth.

The libration of the moon show the north, east, south, and west sides of the heavens.

The motions of the moon are found by watching the sun spots.

There can be an eclipse of the moon when the sun gets into the moon's shadow.

Juniper is a very bright star.

Venus, Jupiter and perhaps the earth was known to the ancients.

Mars moves in his orbit at the rate of sixteen seconds a mile.

The earth is 1492 miles in circumference.

The spheres are to each other as the squares of the homologous sides.

Eclipses are caused whenever the obscuration of a body is passed by the shadow of some other body.

The planets shine with steady light but the stars sprinkle.

The stars would cover up the whole heavens if they were all spread out so astronomers have concluded to arrange them in constellations.

POLITICAL.

The world would be in a state of cosmos if it had no system of government.

Congress is divided into civilized half civilized and savage.

The Constitution of the United States was established to ensure domestic hostility.

The first Conscientious Congress met in Philadelphia.

A bill becomes a law when the President vetos it.

The three departments in the general government are the White House, Custom House and United Treasury.

The three departments of the government is the President rules the world, the governor rules the state, and the mayor rules the city.

The Constitution of the United States is that part of the book at the end which nobody reads.

There are two political divisions in the United States, the democrats and republican.

From "ENGLISH AS SHE IS TAUGHT." Genuine answers to some examination questions asked in our public schools.—Published by The Century Company, New York.

BEFORE AND AFTER.



The above illustrations from the artistic department of our Philadelphia salesroom, were designed to represent the facial expressions of the man who first tries pencils of other makers, and finely secures a Dixon "American Graphite." It is a story requiring very little explanation.

ONE day, George Stephenson, seeing a train drawn by one of his engines, asked of a friend: "What makes that train go?" "The engine," was the reply. "What moves the engine?" "The steam." "And what makes the steam?" "The coal." "But what has produced the coal?" His friend remained silent for a moment after this unforeseen question, and Stephenson replied to it in a word,—"The sun."

Graphite

VOL. IV.

FEBRUARY 1902.

No. 3.

Issued in the interest of Dixon's Graphite Productions, and for the purpose of establishing a better understanding in regard to the different forms of Graphite and their respective uses.

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"AS GOOD AS DIXON'S."

Whenever you are offered anything in the way of a substitute for any of the Dixon productions, and told "It is as good as Dixon's," insist on the privilege of examination and trial before purchasing.

Dixon's pure flake graphite is now known the world over as a lubricant of unequalled quality, and its fame and name has tempted others to imitate it. We have seen and analyzed several of the imitations and so far have found not a single one fit for the uses for which they are advertised.

We do not fear honest or fair competition. We have been long in the business, are fully equipped and know all the ropes, and are able to take care of ourselves, but we do not want to have the minds of people prejudiced through

the use of inferior graphite. So we say, before using anything offered you as a substitute, compare it with Dixon's. If you contemplate using graphite as a lubricant you will have unsatisfactory results if you use anything inferior to Dixon's pure flake graphite. Before you buy, send for a sample of Dixon's and compare.

We prepare different kinds of graphite in many different ways, and are experienced in the selection of the proper graphite for the work it is to do.

If you are thinking of using a graphite paint send for our records of Dixon's Silica-Graphite Paint. It will pay you to study the matter a little and make comparisons.

Almost any kind of graphite can be used with same degree of satisfaction in making a pipe joint compound, but if you want full crop satisfaction, you will see that you get something that has the quality and reputation behind it of Dixon's Graphite Compound for pipe joints, gaskets, etc.

Dixon's products are not patented. The only protection they have and surety to long life is their unquestioned quality and fair price. That and that only is what we depend on. See that you get nothing inferior to Dixon's. We are sure you can get nothing superior.

DIXON'S "American Graphite" Pencils—"that excel the quirks of blazening pens."—*Othello*.

ABOUT BELTS.

We are told that probably the most abused servant in the ordinary engine room or factory, is the long suffering leather belt. It is often improperly put on in the first place, it is strained beyond endurance by the application of rosin belt dressings, in an effort to make it carry an overload, it is laced and relaced and it is never cared for to keep it soft and pliable.



The life of a belt depends on the care given it. An expert, in an article in *Mechanical News* says:—"The common and every-day users of belts know but little about them other than what they learn by observation. They know how to put one on the pulleys when it slips off; know how to re-lace it when the lacing gives out, or how to cut out a piece and take it up when it becomes too slack, or how to put rosin on it when it slips. The latter lesson is learned too quick, probably because it ought not to be learned at all. Rosin is simply an injurious stimulant which tends to destroy the vital energies and shorten the life of the belt, especially a leather belt."

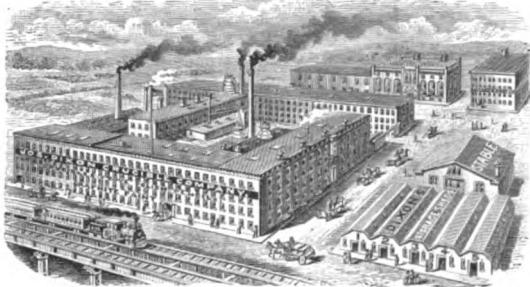
Another writer, in a letter to the Dixon Company says:

"We have been using Dixon's Belt Dressing and Leather Perservative some two years, and think it the very best, and recommend it fully. We apply it with a brush or a swab on *all* our main belts, and choose for that time Saturday nights when the work is done. We run the engine slow and apply it as evenly as we can, and by Monday morning the belts have absorbed the dressing in a great measure. By this means our belts are in good order all the time."

If any of our readers are interested in this subject we will gladly furnish further information.

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President. Vice Pres. and Treas. Secretary.**

JERSEY CITY, N. J., February 1902.

GRAPHITE AND ITS USES AS A LUBRICANT FROM A FOREIGN POINT OF VIEW.

An address on "Graphite and its Uses as a Lubricant" was delivered before the Franconian-Upper Palatinate, District Society German Engineers, Nurnberg, by Royal District Engineer Franz Wagner, and translated for us by Mr. William Koester, of the Dixon staff.

The remarks of the eminent German engineer show beyond question that the use of graphite as a lubricant is not only increasing but is also being extended throughout the civilized world, and that engineers are giving the matter very serious consideration.

It is also being most conclusively shown that pure graphite, and pure graphite only, should be used, and it is not unpleasing to the Dixon Company to learn that Dixon's Pure Flake Ticonderoga Graphite seems to be the standard the world over.

The paper entire is too long for reproduction here, but we believe the following extracts from Mr. Koester's translation will be of interest to our readers.

"The use of graphite as a lubricant is not new, for long ago we find that graphite mixed with grease was used to lubricate the teeth of gears and the axles of wagons; it was also used with oil to cool hot bearings, and in powder form for the lubrication of blowing cylinders, and for many other purposes.

Our old engine builders, and particularly the so-called 'mill doctors,' always had a small quantity of graphite handy and thereby gained great reputation, because with the use of a very small quantity of their secret remedy

they were able to cool the hottest bearing in a very short time, while other mechanics puzzled in vain to accomplish the same result.

I had opportunity to observe repeatedly that when our locomotive and tender journal bearings became heated, one of our older officials would prepare a mixture with which he would fill the bearing, and the result was always favorable.

Until to-day, graphite as a lubricant has not gained the importance to which it is entitled, and the reason for this is that the graphite heretofore offered for use was not pure enough. It was usually in its native state, simply pulverized, only in rare cases washed, but always mixed with earthy impurities, clay, quartz, lime and metallic oxids, generally iron oxids. These impurities generally gave graphite more of the qualities of emery, and it appeared after the graphite had been in use for a while that the surfaces were worn and cut, while the impurities filled up the feeding channels, so that in close fitting bearings heating could not be avoided when graphite was continuously fed. It therefore became necessary to apply graphite as medicine is used, that is, a small quantity will cure, where an overdose will harm.

It is only recently that graphite has again been recommended as a lubricant, and that from America, where mines have been discovered which yield a very pure graphite.

Through an article in 'Transactions of the Society German Engineers,' my attention was again directed toward graphite as a lubricant. In this article it was stated that lately America has sent abroad a variety of graphite known to the trade under the name of Flake Graphite,—Ticonderoga Graphite,—from the mines at Ticonderoga, in the state of New York. This particular graphite is said to distinguish itself by its purity and when mixed with oil, that is, lubricating oil, on bearings, it is said to effect a very perceptible saving of oil, and to increase very perceptibly the lubricating efficiency of the oil. For the lubrication of the steam-cylinders of the American river steamers it is used mixed only with water, and that successfully.

In the case of locomotives, where graphite was used for lubricating the steam-cylinders, figures of its use were given, which were so low that I doubted their correctness. I therefore undertook the task of examining to see if graphite really could be used as stated, and what were the advantages of graphite lubrication as against oil lubrication. The results I obtained I shall give you to-day."

He then describes various tests, made on lines similar to those made by our American engineers, beginning with a 100 h. p. engine, and, in consideration of the successful results obtained, the same method was applied to two compound engines and to three steam hammers and the same satisfactory results obtained.

He then adds:—"I was naturally very anxious to try this kind of lubrication on our locomotives to see if graphite, under very different conditions, would maintain its lubricating qualities.

On the locomotive the most important thing is the lubrication of the slides in the steam-chest, because it absorbs an immense amount of friction energy. I was impelled to try lubrication by means of graphite on account of the rapid destruction of phosphor bronze and manganese bronze slides

which were so badly worn in six months or less that their removal was imperative."

In the opinion of Mr. Wagner, who goes into the matter too extensively for reproduction in an article of this kind, the reason for the rapid wear was insufficient lubrication, as the pressure on the slides could not cause such wear if they were properly lubricated. He found it necessary to invent a lubricator to meet the requirements of graphite lubrication. The engine selected was one of a group of twenty engines of the same series. Careful and detailed records were kept of the trial engines as well as of all the other engines.

After commenting on the saving effected in lubricating by the use of graphite, Mr. Wagner says:—"The steam-chest and cylinder were opened at regular intervals and examined, and it was found that the surfaces bore a very high polish, which was not observed in the case of the other engines. This polish can only be credited to the addition of graphite to the lubricating oil. It is self-evident that the smoothness of the friction surfaces decreases the amount of power lost through friction, and this is shown in the most definite manner in the trial engine, first, by the easy handling of the lever.

The trial engine allowed the reversing of the lever with one hand, without any great effort, while the locomotive was running with a pressure of 10 atm., and fully opened throttle; while it was impossible on the other engines to reverse the lever except with great effort.

Second, when the power lost by friction is diminished, the consumption of fuel will decrease. The quantity of fuel used on the trial engine as compared with the other 19 engines, showed a reduction of 3 kgr. per km., and on the basis of an average mileage of 55,000 km. per year, this equals 165 tons of coal per year.

These figures are worthy of consideration.

The trial engine has the best record for coal and water consumption among all of the 20 engines.

I have demonstrated that by using graphite for lubricating slides and pistons, money is saved.

First, because cheaper and less oil is used in lubrication.

Second, in saving fuel, particularly in the case of engines of high pressure and steam reverse levers.

I must here insist that favorable results can only be reached when very pure graphite is used, and when this is so applied that it is dusted upon the surfaces of the slide and cylinders, it must be blown into the steam-chest and cylinders with the steam, or else the feeding tube of the lubricator must be connected with the steam-pipe or the steam-chest, so that the steam passing through will seize and distribute the lubricant."

THE PERSONAL ELEMENT.

H. H. Vreeland, president of the Metropolitan Traction Company, in testifying to the value of properties, says that we cannot safely or justly eliminate the personal element. A company may be wrecked and yet that company have in it all the factors necessary to success except the personality and power of some one or more men. It is all a matter of business ability and ingenuity.

J. Pierpont Morgan & Co. occupy a building and lot at

the corner of Wall and Broad streets. The business done in that house amounts to many millions a year. The volume of this business depends not only upon the location of this site, but upon connections which it has established throughout the world. Within one hundred yards of the corner of Broad and Wall streets may be another lot with a building of equal size and desirability, but the business done by the banking house in that may be only one-tenth of the business done by J. P. Morgan & Co.

There are in commerce, as in war, a number of men whose power and influence is felt, and whose leadership is recognized without question by vast multitudes.

IT IS NEW TO US.

Mr. A. G. Thompson, a Dixon salesman, writes from Seattle, Washington, as follows:

"Last week I sold Mr. H. B. Dunbar, through a local dealer, two gallons of ready mixed natural graphite paint, to paint his chandeliers. To-day I saw several that had been painted and I want to say that the effect is fine: a beautiful shiny black, that looks well at all times, but when the lights are lit you have no idea how fine it shows up. Mr. Dunbar will paint every chandelier in his house with this paint. I do not know if putting paint to this use is new to you or not. Considerable paint can be sold for this use at the various hotels at which the 'boys' stop.

"One of the troubles of a hotel man's life is to keep his chandeliers clean; second to that, it gets him into the habit of using Dixon's paint."

THE GREATEST DISCOVERY OF 1901.

According to *Iron Age*, the greatest of the year's discoveries, in the opinion of Sir William Huggins, president of the Royal Society, is that of the new star in Perseus, which has undoubtedly created a profound excitement in the scientific world. The evidence that there is "something doing" in the heavens on a scale of magnitude out of all proportion to the phenomena representing the orderly and normal behavior of the stars is well calculated to set the astronomers agog, even though it does not banish sleep from the eyes of those whose acquaintances with Perseus is slight and formal. The new star in that constellation flashed into visible existence in February last.

HIS ONE CENT CONSCIENCE.

The Conscience Fund, at Washington, was enriched yesterday by one cent, contributed by a Toledo citizen who recently purchased a lead pencil from a Canadian at Buffalo, paying two cents for it. He learned subsequently, to his great humiliation, that the Canadian had not paid the duty, amounting to one cent. To relieve a conscience-stricken mind he inclosed a one-cent postage stamp in a letter to Treasurer Roberts. The writer did not disclose his name.—*Boston Evening Transcript*.

"Some confounded idiot has put that pencil where I can't find it!" growled a man the other day, as he searched about his desk. "Ah, um, yes! I thought so!" he exclaimed in a low key, as he took the article from behind his ear.

GRAPHITE LUBRICATION.

In the up-to-date machine shop, factory, power plant, and in the great railway systems of the world the question of proper and thorough lubrication is demanding and receiving far more attention than it did a few years ago.



Insufficient lubrication is now known to mean not only annoying delays, wear, and loss of power, but less economy and a loss of money which present sharp competition cannot stand.

Sperm oil was once considered the standard as a lubricant. In Europe it is still largely used and quite generally preferred, although in the United States it has given place to petroleum products.

At the present time there seems to be no oil lubricant that can be called a standard, and in truth there cannot be any standard for the reason that lubricating oils must be selected for the work to be performed.

An oil lubricant, by filling up the inequalities of the bearing surfaces with its globules, lifts the opposing surfaces above the irregularities and forms a new surface, consisting practically of an innumerable series of microscopic but perfect "ball bearings."

The disadvantages of oil lubrication are, that in order to lift the microscopic irregularities of the bearing up, so that they will not rub and wear against the microscopic irregularities of the journal, there must be maintained between the rubbing parts a layer of oil sufficient to prevent direct contact between the surfaces; and to maintain such a layer, the material must be proportionately consistent. Now the greater the consistency or viscosity of an oil, the thicker will be the layer between the rubbing parts; but, as it has been demonstrated by all experts, in order to obtain the best results, the oil should be as fluid as possible. In other words, experts in oil lubrication acknowledge that there is a loss in lubricating power if the oil is thick and there is a loss in strength if the oil is thin. There can be no happy medium; for with increased viscosity there is a loss in lubricating power, and with increased fluidity there is an insufficient layer maintained between the rubbing surfaces.

The escape from the limitations of oil lubrication is found in the proper use of a properly prepared flake graphite. The careful and thorough experiments in the testing rooms of experts, and the practical demonstrations of

locomotive engineers, show that where properly prepared graphite is used, marvelous results in better lubrication are obtained.

The satisfactory results are due to the graphite filling up the microscopical irregularities of the bearing, making a solid surface, free from the "internal friction" of moving oil, and a surface unaffected by any change in temperature.

HAVE YOU AN AUTOMOBILE?

If you have, then you will require some of Dixon's graphite preparations.

No matter what kind of an automobile you have, some form of graphite will be required. We have sent out samples to users of all kinds of automobiles, and the letters we have received have shown that Dixon's Graphite is indispensable. The following letter is a fair sample, and if any of our readers are interested we shall be glad to send samples and further information.

GENTLEMEN:—We received the samples of Dixon's Graphites you so kindly sent, and have been giving them a thorough trial.

We mix up the dry Graphite No. 635, (a very small quantity of it) with the cylinder oil, and find the cylinders have taken a high polish and the pistons are running very much more smoothly, and we believe the addition of graphite is a great improvement over cylinder oil alone.

As a chain lubricant Dixon's Graphitoleo is giving perfect satisfaction.

In using the Graphite Pipe Joint Compound, we noticed from the very first a decrease in the number of very leaky joints. We consider it superior to red lead or any compound we have tried.

We shall not be without these graphite compounds in the future.

Yours very truly,

(Signed) F. D. KNIGHT & SON,

Manufacturers of Steam Automobile Carriages
and Automobile Engines and Boilers,

HUDSON, MASS.

TURNTABLE TROUBLE.

How a Travelling Engineer of a Prominent Railroad Cured It by a Dose of Dixon's Pure Flake Graphite.

"Here is a free, gratis, voluntary testimonial for you. Give it to you, as a publication of the same may help somebody situated same as we were."

"We had a turntable at one of our division points that was a confirmed nuisance. It took from six to eight men to turn it.

"Jacking up, oiling, etc., did not help it at all. One day an engineer suggested graphite. The foreman, only too willing to try anything, immediately acted on the suggestion and poured about two pounds into oil holes in center casting. As the graphite began to work down the table began to work easier, until at present two men can turn the largest engine with ease. This was about 6 weeks ago, and table still turns perfectly free. Nothing else was done on table."

Graphite

VOL. IV.

MARCH 1902.

No. 4.

Issued in the interest of Dixon's Graphite Productions, and for the purpose of establishing a better understanding in regard to the different forms of Graphite and their respective uses.

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A TRIBUTE TO DIXON'S STOVE POLISH.

From Butteville, in far off Oregon, we received an interesting letter from a lady who fully appreciates the value of Dixon's Carburet of Iron Stove Polish, and who evidently is a thrifty and first-class housekeeper.

She sends us ten cents and says:

"Will you kindly send me a package of your Carburet of Iron, and if you have an agent in Portland, Ore., which is nearest our city, please let me know.

"If women only knew the value of Carburet of Iron they would use no other stove polish. It is all that you claim for it. My kitchen range is the admiration of my neighbors, yet I use very little polish.

"Will you permit me to say that you omit a very important thing in your directions; namely, that the surface to be polished must be quite cold in order to get the best results.

"I enclose ten cents and shall be much obliged if you will send me the polish."

This letter and the ten cents were sent to our San Francisco branch with instructions to give it prompt attention and also to whoop up the dealers in that neighborhood.

KICKS AND KICKERS.

Why Don't The Kickers, While They Are Kicking, Kick at Brains As Well As Money?

BY JOHN A. WALKER.

Fault is found by many that money is unequally owned; one man has several millions, and one thousand others have none, or very little; why don't the same folks "Kick" at the distribution of other talents than the money making one? Why don't they say its a shame and not to be submitted to that one or two men are eminent mathematicians, can delve in fluxion and differential calculus and calculate eclipses, while a thousand others have troubles with simple arithmetic?

Why don't some folks "Kick" that there are three or four eminent poets in every age like Browning, Tennyson, Shakespeare and others, while thousands can't make a penny rhyme?

Why don't some folks "Kick" because there are three or

four electrical experts to an age like Edison, Kelvin, Tesla, while thousands don't know a volt from an ohm?

Why don't some folks "Kick" because three or four men in a generation do the scientific discovering, and tens of thousands can't comprehend it after explanation? Thus through every branch of human experience, letters, discovery, science, electricity, poetry, three or four men do the pioneer work, to get the world-wide renown. Why don't the same "Kickers" "Kick" at this?

It's a monopoly of talent, it should not be submitted to—take it away from them.

Strip Edison of his gifts and distribute them equally; take away from Shakespeare his talents, and make dead levels of the crowd.

Why don't this "Kick" come? We give this tip free to "Kickers," and would remind them that this matter of gifts is a monopoly which no free man should submit to.

It's an outrage that Tennyson writes a song that is in everybody's ears, and five thousand ordinary men can't even write plain prose—up a "Kick"—this is a free tip.

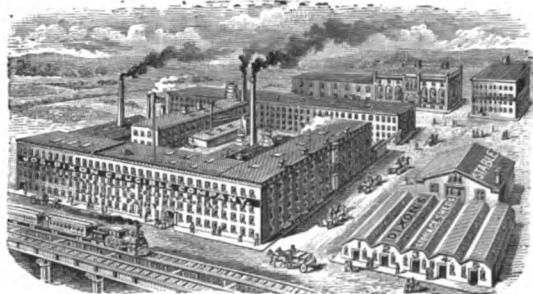
FIGURE IT OUT.

As something pleasing and interesting in the advertising line, the Dixon Company got out for the Automobile Show a puzzle called, "Figure It Out," which was used for advertising lubricants for automobiles. We sent one of these little puzzles to all our newspaper friends, and the puzzles have caused much interest and amusement.

In the office of "Wade's Fibre and Fabric," none of "the boys" could figure it out excepting the unique editor and proprietor, Mr. Jos. M. Wade. We have never had the pleasure of meeting Mr. Wade personally, but somehow we have formed in our mind that he is very much like the man who was lately recommended to us as an expert accountant. Our friend, in recommending him, said:—"The man I had in mind is one of the gumptous kind. He used to make wire-fence; when he found that he had to have a different fence and had to rely on himself for it, he not only made the thing in theory but the machine that turned out the fence. He used to work in a foundry. Then he was with the Remingtons, where he did the work of three men and got the pay of four, as is usual in such cases. He has a good position now, but there is prospect of his being out in May. Being a man of family, he is casting an anticipatory eye about, as becomes the man upon whose work the comfort of others depends. Sort of keep him in mind. It may pay you to do so."

ESTABLISHED 1827.

INCORPORATED 1868.



JOSEPH DIXON CRUCIBLE CO.,

JERSEY CITY, N. J., U. S. A.

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RESIDENT REPRESENTATIVES AT

Boston, Chicago, St. Louis, Pittsburg, Paris, Hamburg, Vienna,
Amsterdam, Brussels, Berlin, Dresden, Milan, Lisbon, Copenhagen,
Warsaw, Barcelona, Bergen, Morgen Switzerland, Finland.

GRAPHITE MINES AND MILLS AT TICONDEROGA, N. Y.
CEDAR MILLS AT CRYSTAL RIVER, FLA.

OFFICERS:

E. F. C. YOUNG, JOHN A. WALKER, GEO. E. LONG,
President. *Vice Pres. and Treas.* *Secretary.*

JERSEY CITY, N. J., March 1902.

THE PASSING OF THE TRAVELING SALESMAN.

Methods of selling goods are undergoing a change. The traveling salesman is giving away before the resident manager. Time was when salesmen left the main office and made their office on a Pullman train or at hotels. These men made regular circuits, called upon customers so many times each year, and returned to the office in the dull season. Now a resident manager is appointed in one of the large cities, and he has complete charge of the adjacent territory within a radius of a hundred miles or more. The latter method is more economical than the former and produces better results. The increase of office rent and wages of office help, does not amount to as much as railroad fares, hotel bills and other expenses of a traveling man. The resident manager can do considerable more business as he practically becomes part of the community in which he resides, and his factory or home plant is not looked upon as a foreign concern.—*American Manufacturer.*

DIXON'S PURE FLAKE GRAPHITE CUTS DOWN THE OIL BILL.

The following pleasing testimonial letter came to us from Mr. W. H. Graham, Engineer of the Dominion Iron & Steel Co., Inc., Bell Island, Newfoundland.

"We have been using Dixon's Flake Graphite and find it first-class, so much so that we are now using it in all of our engines, and have thereby cut down the oil bill greatly. When we asked the agent in Sydney to get us some of Dixon's graphite he informed us that they had some in stock and later sent us some and this we are using now."

GRAPHITE IN ENGINE CYLINDERS.

In our issue of November last we printed an extract from *The Engineer*, of London, concerning lubricating graphite and devices for feeding same. The extract was from an article written by the well known engineer, J. S. V. Bickford, Camborne, Cornwall.

We now have the pleasure of reproducing something more on the same subject by Mr. Bickford, which appeared in *The Engineer*, Nov. 29. The article referred to is entitled "Experiments on Cylinder Lubrication," and after writing very interestingly on oil lubrication Mr. Bickford takes up the subject of graphite as follows:

"The feeding of graphite to cylinders is not so easy as it appears. As pointed out by Mr. Smith some time ago, graphite is apt to stop where it is put. It must be remembered that, as a rule, the velocity of steam in a steam pipe is not nearly enough to carry graphite in suspension even when dry, and graphite in a steam pipe is usually wet with either water or oil.

"The Lunken Valve Company, of London, makes a sight-feed graphite feeder, which will feed flake graphite well and visibly, and is capable of regulation. The only graphite I have tried this lubricator with is Dixon's Flake, which is in form of thin scales, or flakes perhaps, a thirty-second of an inch square, and with this it worked well with superheated steam.

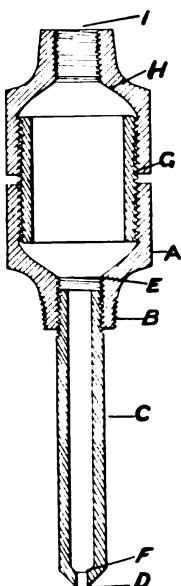


FIG. 1.

This lubricator is fitted into the steam pipe or cylinder cover by the thread *B*, and is filled with flake graphite at *I*. As soon as steam is turned on it feeds regularly. The only two graphites tried were Dixon's flake and fine. The former was the only one which would feed. I am inclined to think that a flake graphite is essential for this class of lubricator; the only brand which I have actually tried is Dixon's.

"Graphite mixed with oil in a cylinder lubricator soon chokes the lubricator, and water will not sink through either graphite alone or a mixture of graphite and oil, so that neither pure or mixed graphite can be fed from a displacement lubricator, such as Roscoe's. I have never tried feeding a mixture from the lubricator described in Fig. 1.

"Before closing it will be well to emphasize the necessity for the very utmost care in the selection of a graphite for cylinder lubrication. Graphite as found in nature is, practically speaking, never pure, and should the impurities be of the nature of emery, sand, or grit, generally, the result can be well imagined.

"I do not hold a brief for Dixon's people, but as far as I

know they are the only people who have made a special study of graphite for lubricating purposes, and as I stated in a letter to *The Engineer* some time ago, (reproduced in *Graphite* for Nov. 1901), I had some of this examined by burning off the carbon in a muffle. The chemist reported that the residue, which was not very much, seemed to be mica. Now, as mica is a good cylinder lubricant itself when carefully prepared, it stands to reason that the above brand of graphite can be considered good for lubrication."

For the benefit of our readers who may not have a copy of *Graphite* for August 1899, we reproduce cut of a home-

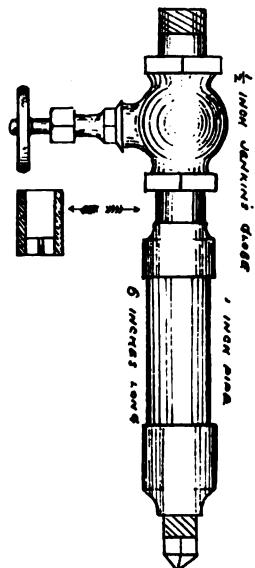


Fig. 2.



Fig. 3.

made but very satisfactory device (Fig. 2.) The engineer who devised it says:—"In the nipple, indicated by arrows, I drive a brass plug and drill a one-sixteenth inch hole. I fill the device once in three days and the steam takes care of the graphite. I have reduced the feed of cylinder oil to one-half of the amount formerly used. I put one cup on each high pressure steam chest, and the exhaust carries the graphite over into the low pressure cylinder, and over into the air pump."

We also reproduce cut of the Lunkenheiern graphite sight-feed lubricator mentioned by Mr. Bickford (Fig. 3.)

The subject of graphite lubrication is a very interesting one and is commanding the attention of the most able engineers. It affords us great satisfaction to add that there is no graphite as yet found equal to Dixon's Pure Flake Ticonderoga Graphite.

"QUIT THAT, WILLIE!"

The inimitable Hubbard in December *Philistine* says: "One Bug-House Wilshire, who explains seven times in one article that his father left him a fortune, is the man who a year ago started a magazine at Los Angeles, with the money his mother left him, and called said magazine "The Philistine." I had to say, 'Quit that, Willie!' three times, just like that, before he did."

The Dixon Company have had to say "Quit that, Willie!" several times to different parties who have been imposing on a confiding public a poor, very poor quality of graphite paint labeled "Silica-Graphite Paint." In one case the man went so far as to call it "Dixon's Silica-Graphite."

We thought that "Quit that, Willie!" was not sufficient unto the evil thereof in that case, and we "took the law on him" fully and completely in spite of his protestations that he "thought he was doing us a favor by advertising the Dixon name and paint."

The name and reputation of Dixon's Silica-Graphite paint is now such as to invite counterfeiting, and if "Quit that, Willie!" is not sufficient to stop such business, then the Dixon counsel will be directed to put the strong arm of the law in vigorous motion.

JAPANESE ENGLISH AND THE DIXON SALESMAN FROM THE ORIENT.

When the Dixon salesmen in the United States are sleeping, and dreaming of big orders taken or bigger ones yet to be taken, other Dixon salesmen are in far away parts of the world, wrestling with strange languages and buyers quite as sharp as our home Yankees.

Wherever a Dixon salesman goes he finds the English language spoken with much pride and not a little difficulty.

One day a traveler in Japan said to the waiter: "Kishi, the rolls are cold."

"Yes," said the waiter, "a good deal of not cooling the cakes is good."

A Tokio dentist's circular reads: "Our tooth is an important organ for human life and countenance, as you know; therefore when it is attacked by injury artificial tooth is useful. I am engaged in the dentistry, and I will make for your purpose."

Mr. R. A. Brown, the travelling representative of the Dixon Company in the Orient, lately returned and was full of interesting experience and reminiscences of the far East.

The Dixon Company gave him a dinner at Muschenheim's, and Mr. Brown had only one cause for pain. He liked the dinner, he liked the company, and he liked the expansion talk and all that, but he said that some of the stories had been considered as chestnuts in the Orient some six thousand years ago.

A CURE FOR LOVESICKNESS.

The advice given in the time of Queen Elizabeth as to how to dispose of a slighted and despondent lover runs thus:

Tye one end of a rope righte over a beame,
And make a slippe noose at the other extreame.
Just under the beame let a buckett be sett,
On it lett the lovier most manfullie gett.
Righte over his heade lett the snicket be
gott,
And under his ear well fasted the knott.
The buckett kicked cleare, lett him take a
full swinge,
And leave alle the reste of the worke to
the stringe!



MAKING A SHIPMENT TO DIXON'S SAN FRANCISCO BRANCH.

The above illustration shows a shipment of goods to be sent by steamship "Hawaiian," New York to San Francisco. The shipment consisted of 753 packages, aggregating a weight of 105,560 pounds.

WAS IT A BIG CASTING?

The Colossus of Rhodes was set up B. C. 280, and thrown down by an earthquake B. C. 224.

It was of bronze and by tradition stood one leg on one land and the other across a bit of water, and under it sailed the ships of the time. It was 100 feet high. One writer says it was supposed to be a large casting. How did they do such work 2,300 years ago?

THE TRIALS OF SUCCESS.

It has been well said that the successful man, if he has any clear self-knowledge, knows that he is being relentlessly tested, and that the sternest adversity could not more searchingly reveal the quality of his character. The tests of success are more searching than those of adversity, because the temptations of prosperity are more subtle and insidious than those of adversity. Of the successful man much more seems to be expected. He is not excused if he makes any fault of judgment or error in any way. He must be on his guard at all times, for he is at all times subject to criticism of those who have been less successful, or of those under him.

A man may be giving his very life in an heroic effort to successfully administer the affairs of a large corporation on

which depends the living of hundreds of laboring men and employes. People at large, when they do think of him, think chiefly of the commanding position he has and the opportunity of enjoyment which his position and income should bring him. The man himself thinks chiefly of the great responsibilities which his position imposes upon him.

"THE RULE OF THUMB."

Many think that the so-called "rule of thumb" is simply a rule having its foundation in common sense and practice only. As a matter of fact every good rule has its foundation, not only in common sense but equally so in theory and science.

The nature of friction, the cause of heating, the effects of temperature and pressure, the laws which govern friction and lubrication, all contribute to the reason why Dixon's pure flake graphite is such a prime favorite with engineers and machinists. With them it is like a "rule of thumb," they may not be able to tell *why* or *how* such wonderful results are obtained, but they *know* wonderful results are obtained in lessening friction and saving of oil.

The use of Dixon's pure flake graphite invariably means longer life to all machinery, and better service and less labor and cost.

Graphite

VOL. IV.

APRIL 1902.

No. 5.

Issued in the interest of Dixon's Graphite Productions, and for the purpose of establishing a better understanding in regard to the different forms of Graphite and their respective uses.

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REMARKABLE ENGINEERING WORK.

Construction work on the \$2,500,000 annex to the Mutual Life Insurance Company's building, fronting on Liberty, Nassau and Cedar Streets, which is in several respects the most remarkable structure in the world, is now nearing completion. Remarkable engineering work has been done, with the result that the cellar floor is fifty-five feet below the sidewalk level and thirty-five feet below the line of standing water. The foundations rest on bed rock one hundred feet below the surface of the ground.

Above the sidewalk the annex is eight stories in height in Cedar Street, matching the older extension in that street, while it towers sixteen stories high in Liberty street. The addition alone covers an area of sixteen thousand square feet, or about seven city lots.

The building at No. 32 Liberty street, one wall of which had to be underpinned, is eighteen stories in height, and the highest building ever so treated. The work was complicated there also by the fact that the ground floor was filled with safes and vaults of a safe deposit company, and a settlement of the sixteenth of an inch would have stopped the working of the locks.

Caissons formed of steel tubes, three feet in diameter, were sunk to support the adjoining buildings, and then work was begun on the foundations proper. A discovery that under the hardpan there was a formation of loose sand and crumbling rock in places thirty-two feet deep, forced the excavators to go to solid rock with all the main caissons, and this was about one hundred feet below the sidewalk.

A complete enclosure of the lot was made by sinking thirty steel caissons, each eight feet in width, and ranging from 15½ feet to 22 feet in length. When these were down to the rock a complete watertight enclosure was made by ramming the spaces between the caissons full of red clay from New Jersey.

This was done by sinking a three inch pipe between the caissons by means of a water jet, dropping cores of clay into the pipe and then forcing this out by dropping a heavy

steel bar upon it. The pipe meantime was drawn up foot by foot until the whole of each space was filled.

Thus it was possible to excavate to the hardpan for the cellar floor without draining away the quicksands and bringing down buildings perhaps for blocks.

—Architecture.

The building referred to above was designed by Clinton & Russel, Architects, No. 32 Nassau street, New York. Dixon's Silica-Graphite Paint was specified and used for protection of all steel work.

This paint enjoys great popularity with prominent architects and consulting engineers, because of the fact that it is manufactured in but the *one quality*, and guaranteed to be of the purest materials obtainable.

The ease with which the paint is applied, its large spreading capacity, protective and wearing qualities, make it a very economical protective paint.

LUBRICATION OF CYCLOMETERS.

The Veeder cyclometers, manufactured by the Veeder Manufacturing Company, Hartford, Conn., are known to all bicyclists, and the odometers and counters made by the same company, are very largely used by autoists and by manufacturers. The Dixon Company use the Veeder counters and find them very useful for determining work performed by various machines.

The Veeder Company say that all their cyclometers when made are lubricated with Dixon's Finely Pulverized Graphite and that it is also a fact that further lubrication is never needed—the graphite lasts for years.

CRUCIBLE STEEL.

Crucible steel, as distinguished from other steel, means steel made in a graphite crucible. The output for the United States for a series of years is as follows:

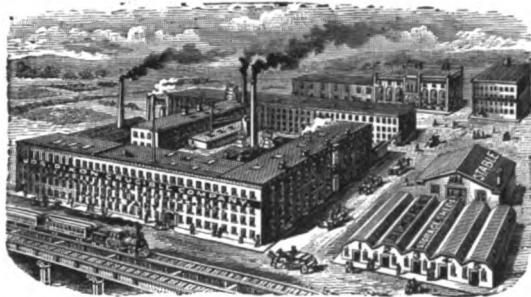
1874 . . .	32,436 Tons
1880 . . .	64,664 "
1890 . . .	71,175 "
1899 . . .	101,213 "
1900 . . .	100,562 "

To produce the quantity for year 1900, took an immense number of graphite crucibles. The cry has been for years that "crucible steel is doomed"—but the product as reported above does not show it.

Dixon's American Graphite Pencils are made in eleven degrees of hardness of leads.

ESTABLISHED 1827.

INCORPORATED 1868.



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CEDAR MILLS AT CRYSTAL RIVER, FLA.

OFFICERS:

E. F. C. YOUNG, JOHN A. WALKER, GEO. E. LONG,
President. *Vice Pres. and Treas.* *Secretary.*

JERSEY CITY, N. J., April 1902.

AMORPHOUS VS. FLAKE GRAPHITE AS A PAINT PIGMENT.

Sometime since, a writer in an article on Protective Paints stated that the natural amorphous varieties of graphite are entirely different in character and composition from the many so-called silica-graphites of commerce.

This should be admitted, for therein lies the superiority of silica-graphites.

The writer also was of the idea that a flake graphite is of an uncertain character; on the contrary, it is just as much a natural product as the amorphous variety, and contains silica in chemical union with alumina, iron and magnesia, as nature made it.

The writer also spoke of what he termed, "so-called silica-graphites of commerce compounded of flake graphite of more or less purity and of uncertain character with barytes, silica, furnace-slag and other substances." The use of such materials, barytes and furnace slag, the one a heavy, white mineral and the other a fusible body of uncertain tint, would not only be a detriment to the composition of, and incompatible with the color of silica-graphite paint, but their incorporation in silica-graphite paints would entail extra expense, and no manufacturer of a silica-graphite paint would think of attempting such an incorporation.

The writer also made a statement that "the silica-graphite compounds had not the merit of being synthetical compounds." This may be said of the amorphous varieties, for the mineral matter is simply inherent in the graphite substance, although the mineral matter itself must have

been produced by a synthesis of its constituent elements through natural agencies.

When the writer makes a statement that "silica-graphite compounds are purely an agglomeration of substances as heterogeneous in character with as many specific gravities as the contents of a spoil bank or gravel pit can furnish," it would indicate that the author of the lines quoted was unfamiliar with the manufacture of at least one silica-graphite pigment where these conditions do not exist.

Quite as startling is the reference to "carbonaceous schists similar to soapstone," which are different both from a chemical and geological standpoint.

It is specially noticeable that the author, who apparently desires to be understood as writing from a scientific standpoint, makes no distinction between free and combined silica.

Free silica, as sand, and combined silica, as silicate, have entirely different properties.

Referring to his statement that flake graphite is "almost as repellent to the oil as it is to water;" this is only proof of its general inert and protective properties, for it does not decompose the oil and is moisture-proof or "anti-damp."

The statement that "the higher the percentage of carbon in graphite, the more difficult it is to properly grind the graphite with oil," and that "an amorphous graphite containing low carbon contents is preferable to a richer and more refractory material" is simply an apology for a cheaper and poorer article.

Dixon's Silica-Graphite Paint is now a well-known paint and is recognized, probably the world over, as a standard for graphite paints. Ticonderoga silica-graphite was ground and used as a paint pigment over forty years ago. At that time it was used on tin roofs, canvas roofs, and wooden sidings, and there are properties still in existence that have not been painted for twenty to thirty years.

During the past ten years Dixon's Silica-Graphite Paint has made enormous strides and imitation compounds have sprung up all around, each one making claims which are really based on records made by Dixon's Silica-Graphite Paint.

The user of any graphite or carbon paint should be careful to look up the actual records of paints offered him, and insist on having a written guarantee as to the purity and quality of the pigment and oil used and also actual records.

Dixon's Silica-Graphite Paint is not a secret or patented paint in any sense of the word. The pigment is simply Ticonderoga silica-graphite. The pigment runs about 50% flake graphite, and 50% finely pulverized silica. The oil is the very best fire-boiled linseed oil; nothing else in any way, shape or form is added.

The silica serves the same purpose in Dixon's Graphite Paint that alloy does in gold when it is manufactured into watch-cases, rings, chains, etc.; it adds the element of durability so far as frictional wear is concerned.

Although graphite is, in all its varied uses, absolutely inert to acids, alkalies and any chemicals, yet it is soft, and silica helps it largely to withstand the wear by abrasion or wear from whatever source it may come.

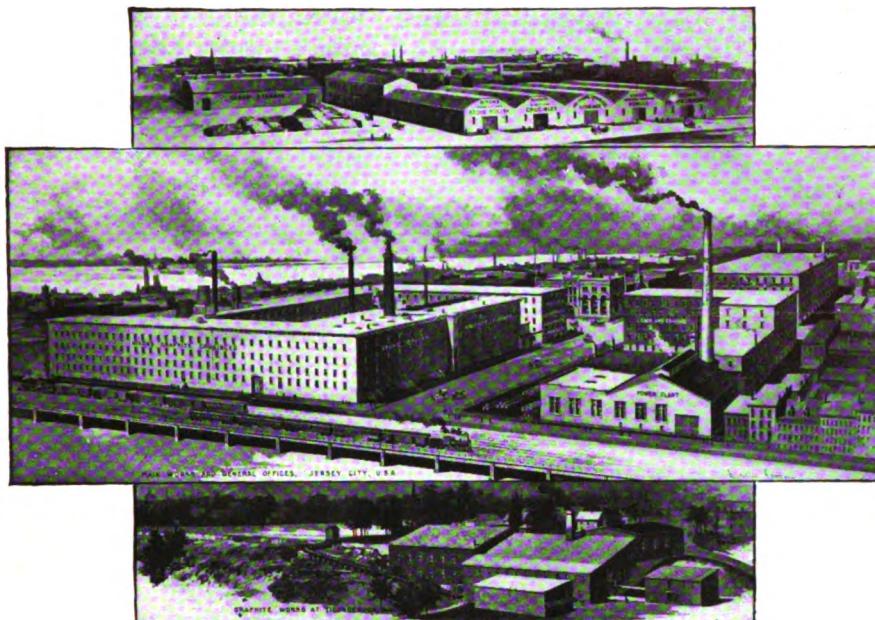
A GREAT INDUSTRY.

Few, even among those of the Dixon Company, grasp the full measure and significance of this mighty industry. In point of number of employes it does not rank with some of the great American mills and railroad companies. But in point of individuality, and in the fact that its products are for use in all classes of industries, and by all civilized men, women and children throughout the entire world, the

water and by rail. They go out in pounds and kilos, with labels in English, Spanish, German, French, Portuguese and Norwegian. There are plumbago crucibles for the foundry and the mine; graphite lubricants for use wherever there are wheels to turn or machines to work. Graphite paint for the protection of the iron work in the great steel structures of our own country, and the bridges and buildings in foreign countries. Wherever you see a trolley line running there you may be sure to find a Dixon graphite resistance in the little device which prevents the trolley wire during a thunderstorm from conducting a destructive charge of high potential electricity to the power house.

In the great publishing and printing houses you will find Dixon's Electrotyping Graphite which insures fine plates and electrotypes, and you will also find that the marvelous type setting and type making machines depend for accuracy and perfect working very largely upon Dixon's graphite.

So we might go on and point out to you where Dixon's products are used in all the industries of our land without

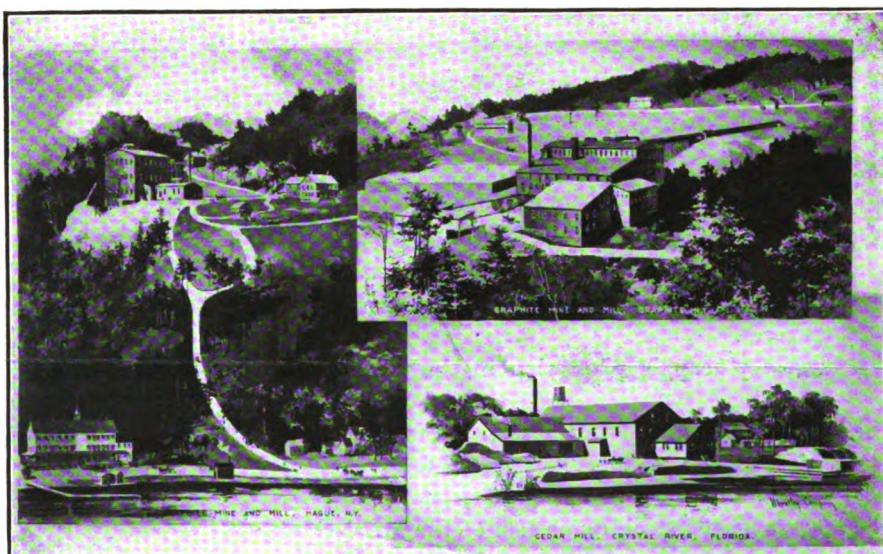


MAIN OFFICE AND WORKS, JERSEY CITY, N. J.

Dixon Company stands alone among manufacturers. It is the only concern of the kind in the world. The mines, mills and factories of the company are separated by over 1,500 miles. At Christmas time everything is in the grasp of winter at our graphite mines and mills at Ticonderoga, New York, with the thermometer at 40 below zero, while at our cedar mills at Crystal River, Florida, the men are glad of the shade, and birds are singing amid the orange blossoms.

As we write, supplies of graphite are coming to us from our own mines and mills at Ticonderoga, and from the mines of Ceylon, Germany and Mexico, and supplies of clays for lead pencils and crucibles from Bavaria, and cedar from the Dixon mills in Florida. These constitute our chief supplies. We are, however, large buyers of brass, rubber, oils, greases, coloring pigments, to say nothing of car loads of packing boxes, etc.

In the matter of distribution there is, day and night, a stream of Dixon products going out over the earth by



GRAPHITE MINES AND MILLS, TICONDEROGA, N. Y.

an exception, and largely throughout the world, and we might show you how each year brings to us some new use and a new demand for that wonderful material—graphite.

Dixon's Automobile Graphites are as necessary as power itself. They insure easy running chains and slides, greatly lessen the noise of gears, make perfectly tight joints and are really indispensable to manufacturers and owners.

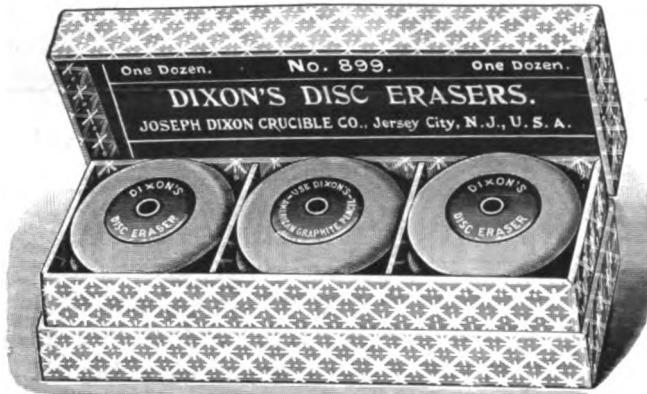
BUSINESS FAILURES.

The annual report of failures in the United States gives another knock-out blow to the old-time persisted in heresy that 95 out of 100 firms in business fail.

The total number of different concerns in business in the United States is about 1,250,000. Of this big total, only a few over 10,000 failed, or less than 1% of the total, the exact percentage being $\frac{1}{100}$ ths of one per cent.

A curious feature of the failures is that 8,500 out of the 10,000, or 85 per cent. of the whole number of failures, were people in business with less than \$5,000 capital.

It ought with these facts before one to gall a man to fail in these days of general prosperity, when the failure rate is so very small. It plainly singles a man out as "not up to his job."



Dixon's Disc Erasers are exceedingly attractive and useful to all who have erasures to make, and they are most salable goods for the dealer.

The rubber is Dixon's celebrated felt rubber, which, for worth, is almost without an equal and it certainly has no superior.

WHAT FLORIDA HAS.

1. Florida is the largest State east of the Mississippi; has the largest apiary in the world—3,000 colonies.
2. The largest Jersey dairy in the world, owned and managed by a woman—100 head.
3. Florida has the largest watermelon farm in the world—2,300 acres.
4. The largest pineapple plantation in the world—250 acres.
5. The largest cassava farm in the world—500 acres.
6. The largest peach orchard in the Gulf States—18,000 trees.
7. The largest fenced stock range east of the Mississippi—25,000 acres.
8. The largest herd of cattle owned by one man east of the Mississippi—50,000 head.
9. Largest orange grove under one management in the world.
10. The wonderfully smooth and straight grained Florida cedar, known the world over as the best wood for lead pencils; also the big cedar wood sawing plant of the Dixon Company at Crystal River, where all the wood is prepared for Dixon's American Graphite Pencils,—said to be the best in the world.

Productions of the Dixon Crucible Co.

Dixon's Black-Lead Crucibles and Retorts.

All sizes and for all purposes. Bowls, Dippers, Stirrers, Stoppers, Nozzles, Muffles, Sleeves, Etc.

Dixon's Brazing Crucibles.

Made in several shapes for dip-brazing.

Dixon's Graphite Boxes and Covers.

For baking carbons and filaments for electric lighting.

Dixon's Fine Office and Drawing Pencils.

Unequalled for smooth, tough leads and uniformity of grading.

Dixon's Colored Crayons.

In wood or solid. For schools, railroads, editors or factory.

Dixon's Lumber Leads.

Black or colors; for green or dry lumber.

Dixon's Felt Erasive Rubber.

For erasing pencil marks, type-writer work, or ink.

Dixon's Carburet of Iron Stove Polish.

The old reliable; in cake or bulk form.

Dixon's Pure Flake Lubricating Graphite.

A solid lubricant for all frictional surfaces.

Dixon's Special Graphite No. 635.

For lubricating cylinders of gas engines and all close or delicate mechanical parts.

Dixon's Electrotyping Graphite.

Used by the majority of practical electrotypers of this country.

Dixon's Hatter's Lead.

For coloring hat bodies.

Dixon's Plumbago for Shot Polishing.

Dixon's Plumbago for Powder Glazing.

Dixon's Plumbago Foundry Facings.

Dixon's Yacht Plumbago.

For lubricating and smoothing bottoms of yachts.

Dixon's Graphite Waterproof Grease.

For gears, wire ropes, hoisting chains and general machinery.

Dixon's Graphite Axle Grease.

Better and cleaner than castor oil for trucks, wagons, carriages.

Dixon's Graphited Wood Grease.

For use on trolley car gears which are enclosed in a gear case.

Dixon's Graphited Oil.

For use in all places where the use of a grease is impracticable.

Dixon's Graphite Cup Greases.

For use in cups or open bearings, on spindles, shafting, etc.

Dixon's Oiled Graphite

Dixon's Lubricating Compound No. 688.

For enclosed gears of electric automobiles.

Dixon's Silica-Graphite Paint.

For metal or wood-work, roofs, bridges, telegraph and trolley poles, smoke-stacks, boiler fronts, and iron construction work.

Dixon's Graphite Pipe-Joint Compound.

For steam, gas and water piping, smearing gaskets and flanges.

Dixon's Cycle Chain Graphites.

For perfectly lubricating chains and gears of bicycles.

Dixon's Graphitoleo

For lubricating bicycle chains, sprockets, pivots and pins; gun locks, and for general use.

Dixon's Commutator Graphite

Will glaze the commutator with the finish so much desired by electrical engineers.

Dixon's Anti-Flux Brazing Graphite.

To prevent the solder from adhering when brazing.

Dixon's Crucible Clay and Graphite Mixture.

For lining and repairing furnaces and fire boxes.

Dixon's Stove Cement.

For repairing stove or range lining.

Dixon's Traction Belt Dressing.

For preserving leather belts and to prevent slipping.

Dixon's Solid Belt Dressing.

Convenient for those who prefer a solid dressing.

Dixon's Graphite Resistance Rods.

From one-eighth to one inch diameter; any resistance required.

Dixon's Graphite Products for Electricians.

Special circulars with detailed information sent on request.

Graphite

MAY 12, 1902
VOL. IV.

MAY 1902.

No. 6.

Issued in the interest of Dixon's Graphite Productions, and for the purpose of establishing a better understanding in regard to the different forms of Graphite and their respective uses.

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A PENCIL STORY.

**What a Philosophic Writer Says About Lead
Pencils—Not Regarded as Property—
Therefore Help Yourself.**

"Speaking of lead pencils," said a dealer, "it is a curious fact that about one-third of the money invested in pencils is thrown away. Men never use all of the pencil, and in many instances they use but little more than one-half of it. They rarely use more than two-thirds. Probably more than one-third of the money invested in lead pencils is thrown away, since I come to think about it. The fact of the business is that the average man does not place any value at all on lead pencils, and the only time this useful article ever comes into his mind is when he needs it to jot down a note, write a letter or figure on some business proposition. And yet, as a matter of fact, millions of

dollars are spent annually in the lead pencil industry, and there is probably no symbol in mathematics, intelligible to the average man, that would express the number of lead pencils used in a single year. Now, why is it that the average man will be recklessly extravagant when it comes to lead pencils?

"Really, lead pencils are not regarded as property. I have known men who would pay 5 cents for a lead pencil and then carelessly give it away, and I have seen the same man quarrel with the stamp clerk at the post-office for thirty minutes because the clerk had made a mistake of 1 cent in his change. Men who are scrupulously moral and who have a most profound respect for the property rights of other men think nothing of pocketing a lead pencil which belongs to some other fellow. It is perfectly moral to borrow a lead pencil from a friend and never return it. It is the proper thing to do. But the men who do things of this sort are generally scrupulously honest, they are good citizens, and they would be the last men in the world to deviate even the breadth of a hair from strict moral precepts. But lead pencils have no value in the general estimate of mankind, and men will give them away on the one hand or steal them on the other, just for the same reason that they will throw one-third of every 5 cents' worth of lead pencil which they buy away. Pretty heavy waste when figured out, isn't it?"—*American Stationer.*

GRAPHITE FOR THE AUTOMOBILE.

Users of Automobiles have this to say concerning Dixon's No. 635 Graphite:

The use of it in steam cylinders and on engine slides means a marked saving in water and gasoline—or a much greater distance on the same quantity. It means also smoother running and less wear.

Dixon's No. 635 in cylinders of gasoline engines means better lubrication, as graphite is not burned out like oil. It also means better compression and less heating.

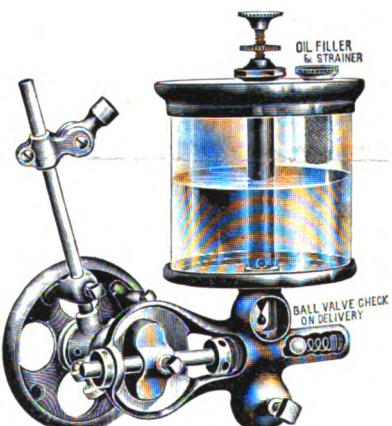
The use of Dixon's Graphite Compound on the threads of sparking plug and on threads of all steam, gasoline or water connections means less leakage and ease of repairs when required.

The use of Dixon's Graphite on chains and bearings insures far better lubrication and less liability to breakage of chain or wearing of bearings.

The continued use of the above "Three Indispensables," as they are called by their users, means lasting satisfaction and pleasure to all owners of automobiles.

THE MANZEL AUTOMOBILE PUMP.

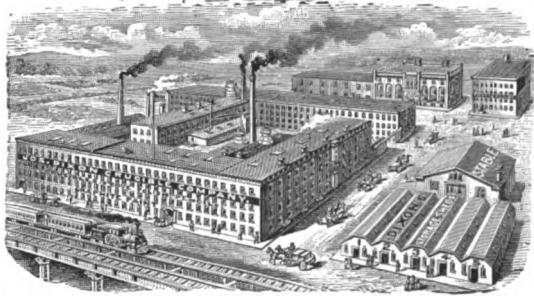
We show herewith new pattern of the Manzel Automatic Automobile Pump. They are made in two sizes, one-third pint and one-half pint, with and without sight-feed. The pump feeds the lubricant to the cylinder drop by drop while the engine is running and stops feeding when the engine stops. In other words, the pump is automatic and, unlike the hydrostatic lubricators, requires no shutting off. Either of the above sizes will hold sufficient lubricant for a run of one hundred or more miles.



One of our correspondents wrote us as follows: "After using sample of Dixon's No. 635 Graphite I was sufficiently convinced of its merits to lay in a stock of it. I use twelve per cent. of it in cylinder oil injected through a Manzel pump. The carriage runs far smoother, and the graphite overcomes piston-packing resistance to a degree impossible with oil alone."

ESTABLISHED 1827.

INCORPORATED 1868.



JOSEPH DIXON CRUCIBLE CO., JERSEY CITY, N. J., U. S. A.

SALESROOMS AT

68 Reade St., New-York. 1020 Arch St., Philadelphia.
304 Market St., San Francisco. 26 Victoria St., London.

RESIDENT REPRESENTATIVES AT

Boston, Chicago, St. Louis, Pittsburgh, Paris, Hamburg, Vienna,
Amsterdam, Brussels, Berlin, Dresden, Milan, Lisbon, Copenhagen,
Warsaw, Barcelona, Bergen, Horgen (Switzerland), Finland.

GRAPHITE MINES AND MILLS AT TICONDEROGA, N. Y.

CEDAR MILLS AT CRYSTAL RIVER, FLA.

OFFICERS:

E. F. C. YOUNG, JOHN A. WALKER, GEO. E. LONG,
President Vice Pres. and Treas. Secretary.

JERSEY CITY, N. J., May 1902.

DIXON'S ANNUAL ELECTION.

During the past month, namely, April 21st, the Joseph Dixon Crucible Company held its annual meeting. To this meeting every stockholder was invited. Every other day in the year we are the tribunal to which our staff and department heads report, but on this annual day we, in our turn, make our accounting to our superiors. This accounting is as exhaustive and painstaking and thorough as in our most exacting moments we ask of any of our staff.

Out of 7,345 possible stockholder votes 7,004 were cast, either in person or by proxy, for the same directors and the same management. There were elected seven Directors, as follows: Edward F. C. Young, John A. Walker, William Murray, Joseph D. Bedle, Edward L. Young, George T. Smith, George E. Long.

From these names there were elected officers as follows: E. F. C. Young, President; John A. Walker, Vice-President and Treasurer; George E. Long, Secretary.

We were able to report larger sales in 1901 than in any previous year, and larger net earnings. We were able to show a goodly pile of assets and no liabilities outside of capital stock. We pointed to some large additions to the plant and some larger prospective ones yet to come. President Young looked back upon twenty-one years of service, Vice-President Walker pointed to his thirty-five years in Dixon harness, and Secretary Long said that the number of his Dixon time was three hundred and twenty-five moons. All three have grown gray-headed in the service, and, with the rest of us, are very proud of the great plant that has gathered around the small beginning of many years ago. Plenty of good words were said for fac-

tory superintendents, branch managers, salesmen and department heads, that have all helped in the grand result. They are all men that are proud to be on our staff, and their ruling word is "Me and Dixon."

We reflected, with satisfaction, that every industry in the world has to use graphite in some form, and we are the fathers of the graphite industry. The company has a magnetism that attracts good customers and keeps them. Our atmosphere is agreeable and pleasant, as is proved by the fact that no one leaves us. The merit rules are always observed in changes and promotions. The jealous man, the shirk, or one lacking in enthusiasm, does not bother us at all, as he does not find our atmosphere congenial.

So we turn to a new year: our old officers and managers re-elected, our new plans endorsed, our associates more enthusiastic, if possible, than ever before; with a big plant, a big stock made up and more in process of making, new machinery in operation and more to come; with every bill and obligation of every kind paid and some pennies yet left in the treasury, and with our watchword, "Rah for Dixon!"

J. A. W.



Mr. Albert L. Haasis, the subject of this sketch, was born in the fifth hour of the fifth day of the week, of the fifth day of the month, and the sixtieth year of the last century, January 5, 1865, Thursday, 5 A. M. Five fingers on each hand, five toes on each foot and the five senses usually allotted to normal humanity. Notwithstanding his advanced age, he is still taken for five on the trolley lines.

This remarkable "bunch of fives" has in a great degree influenced his life and peculiarly fitted him to occupy his present important position with this company.

His earlier days were spent in Princeton, N. J., in the home now occupied by ex-president Grover Cleveland.

A. L. Haasis

Originally intended for the ministry, he was not satisfied to conform to the rigid rules of that profession, so he drifted through a pursership on a Brazilian steamship, and later enjoyed the greater excitement as superintendent of a mining company in Mexico, until the fascination of crucible salesmanship finally fixed him permanently in his present position.

He is tall, dark-haired, dark-eyed and light-fingered, and traces his ancestry back in direct line to the patriarch Noah of deluge fame, the ancient ark being conspicuous in his family escutcheon.

He has traveled extensively through Europe, and his room at his beautiful Brooklyn home bears testimony to

his ability as a collector—many of the choicest pieces having the names of former owners erased.

His motto: "It is better never to lie than to always speak the truth,"—places him in the front rank of story tellers. He is quiet in his tastes, a good entertainer, a good all-around companion who makes and keeps hosts of friends. As a salesman he rates A1, is watchful over the interests of both customers and employers, takes orders with the same carefulness that he exercises in taking souvenirs of travel, and is successful because he succeeds.

His principal recreation is matching pennies for carfares, his success being phenomenal enough to excite suspicion of the use of a double-headed coin.

As a practical joker his inventive genius makes him a master, but he is careful not to give offence or to endanger a friendship.

Graphite is proud to welcome him to a niche in its hall bedroom of fame.

THE PERFECT PAINT.

"We paint to protect the surface as well as to embellish it, and unless the pigment remains unchangeable, there can be but little, if any protection. The oil should remain, binding the pigment in a hard but elastic cement, otherwise both objects of painting are lost."

This is absolutely true. The binder (linseed oil) should be allowed to dry naturally and not hastened by any chemical action of the pigment upon it. This will necessarily make a slow-drying paint, but any chemical action of the pigment on the binder will naturally hasten the drying qualities of the binder at the expense of the lasting qualities of the oil; in other words, the pigment should be absolutely inert. If the pigment contains lead acetate or lead hydrate or natural oxide of lead, then lead oleate will be formed, and when such a pigment is combined with oil the outer protecting skin of the paint will be rendered more or less soluble in water, exposing the entire coat to the elements and 'chalking' will be the result.

A paint should not fail by disintegration, but by gradual wear, and the effect of this wear should continually form an outer protection, which will naturally be the result if the oil is retained throughout the entire paint fabric, composed of the several coats, each having dried and formed this outer protecting skin before subsequent coats were applied."

The above is from that most excellent and practical paper, *The Master Painter*. We print it simply for the reason that the requirements of the "perfect paint" seem to be fully met in Dixon's Silica-Graphite Paint. In Dixon's Silica-Graphite Paint the pigment remains unchangeable. We use in the manufacture of Dixon's Silica-Graphite Paint only pure linseed oil, fire-boiled, and as there is no chemical action of the pigment upon it, the oil is allowed to dry naturally and not hastened in any way. Nevertheless, Dixon's Silica-Graphite Paint is not a specially slow-drying paint. It dries as quickly as anyone reasonably could wish. Silica-Graphite is absolutely inert. The wear of Dixon's Silica-Graphite Paint is gradual. There is no disintegration through any chemical action. The oil is retained throughout the entire paint fabric. The

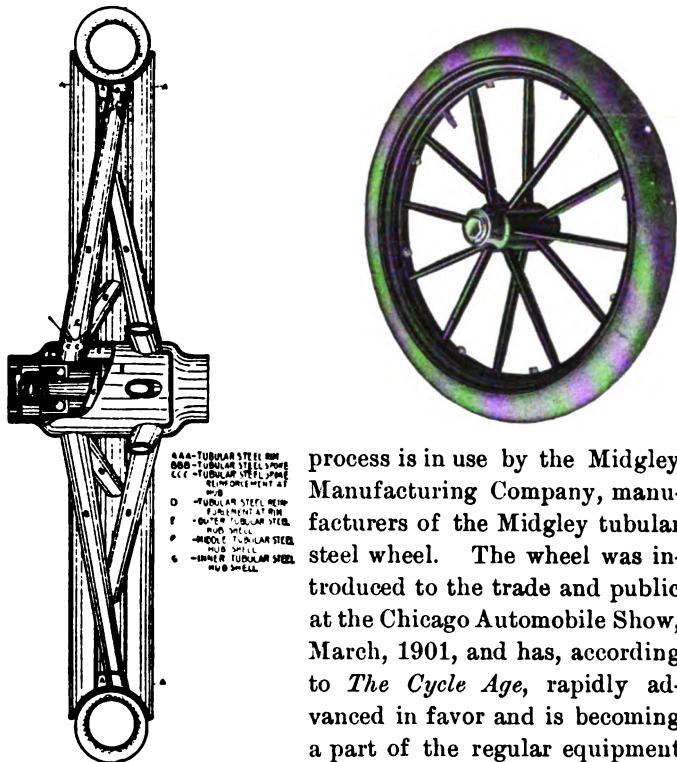
paint skin never becomes unelastic. It is always flexible and, therefore, it does not crack or flake.

We believe that Dixon's Silica-Graphite Paint can be most justly termed "The Perfect Paint."

DIP BRAZING BY THE MIDGLEY MANUFACTURING COMPANY, COLUMBUS, O.

All large manufacturers of bicycles in America are familiar with the process and value of dip brazing so successfully exploited by the Dixon Crucible Company, makers of brazing crucibles, which are now used in Europe as well as in America.

The manufacturers of automobiles as well as parts, have continued the process and, so far as we have been able to determine, have found the process very satisfactory. The



process is in use by the Midgley Manufacturing Company, manufacturers of the Midgley tubular steel wheel. The wheel was introduced to the trade and public at the Chicago Automobile Show, March, 1901, and has, according to *The Cycle Age*, rapidly advanced in favor and is becoming a part of the regular equipment of many of the popular makes of automobiles.

The wheel is substantially constructed for the combined driving and carrying of the load. The hub is formed from three tubular shells, the spoke passing through two of the shells and butting on the third shell, with a strong reinforcement passing up on the inside of the spoke above the outer shell, giving a long brazing surface. The spokes and rims are formed from 14, 16 and 18 gauge steels, according to the weight to be carried. Rims are rolled in two sections, an inner and outer, with an interlocking groove on the flaring edge, and when rolled in shape and brazed form a tubular rim, one of the strongest constructions in steel. The spokes are forced in the inner rim, with strong reinforcements, and after assembling the wheel is dipped in a Dixon Crucible of molten brass, every joint being thoroughly brazed and all thoroughly lined with brass, making a practically continuous tube of hub, spoke and rim.

The Midgley tubular steel wheel is now in practical use on Locomobiles, Wintons, Steamobiles, Milwaukees and other vehicles, and is in the hands of many manufacturers

for experimental work. Several sets were on vehicles which are entered in the endurance contest between New York and Buffalo. The company is in receipt of many complimentary letters on the satisfactory work of this wheel, and claims it to be far superior to either the wood or wire. It cannot dish, crush or buckle; it will withstand all side shocks; its spokes will not loosen or snap, and when properly enameled can easily be kept clean. Indeed, the makers say that after a year's use the wheel will be as presentable as when first placed on the vehicles.

GRAPHITE IN CYLINDER OIL.

One of the Dixon salesmen advises us that a superintendent of a manufacturing company asked him why it was that a prominent dealer in cylinder oils advised customers not to use graphite in cylinder oil. The superintendent is a great believer in Dixon's graphite, and even the salesmen of the oil company were unable to explain why the oil firm advised customers not to use graphite.

At the request of our salesman, we wrote to the superintendent and said that the only reason that we could give was that, without any doubt, the dealers in cylinder oils were well aware of the value of graphite as a lubricant and equally well aware that the addition of Dixon's Pure Flake Lubricating Graphite in cylinder oil or grease would largely increase the value of the oil or grease as a lubricant.

We pointed out the fact that an expert engineer in the employ of the Dixon Company indicated the Corliss Refrigerating Machine of the Genesee Fruit Company of Rochester. He found that 30 h. p. was required to drive the machine. He attached a small hand oil-pump to the steam pipe, mixed a very small quantity of Dixon's No. 2 (fine) flake graphite with their regular lubricating oil and pumped the mixture into the cylinder. After the graphite had had a chance to thoroughly coat the inside of the cylinder, and after he had looked over the other bearings of the engine somewhat, and dropped a little graphite here and there where he thought it would count, he again indicated the engine and found it required 26 h. p.—a saving of 4 h. p. Their engine runs twenty-four hours a day, seven days a week. Previous to the visit of the Dixon expert the Fruit Company were using seven quarts of oil per week. After his visit they were able to run a week of seven days on only one quart of oil, and a very small quantity of graphite, not only making a saving of at least 75% in oil, deducting cost of graphite, but also a saving of over 13% in power. This is only one of many similar cases.

GRAPHITE FOR AUTOMOBILES.

The virtues of graphite as a lubricant are hardly as much appreciated as they might be. True, it is dirty and somewhat difficult to distribute, being, when mixed with oil, not altogether an ideal liquid for drip lubricators; but in such cases as a piston or bearing slightly injured through insufficient lubrication, a short course of graphite will often get the surfaces back into good working condition—a fact worth noting, particularly with steam cars. For valve stems, too, graphite is useful, being indeed the only admissible lubricant, and it is equally beneficial to that

bugbear, the pump. It is somewhat odd, by the way, that lignum vitae bearings have not been employed in the latter, being the only material on which metal will run with water lubrication. Graphite for such purposes should, it is needless to say, be of the best, the ordinary blackleads, though good enough for smearing packings with to prevent adhesion, being by no means suitable for anything else except blacking stoves. Finally, for such small moving parts as are not deemed worthy of special oiling devices, and usually have to depend on a casual—sometimes very casual—oil can, a grease syringe, best employed with some graphite grease, is far preferable.

—R. W. Buttemer, in *Motor Car Journal*.

GRAPHITE AND OIL FOR PIPE CONNECTIONS.

The engineer of the Forest City Ice Company, Put-in-Bay, Ohio, writes us that in putting together a three-inch steam pipe he used Dixon's Flake Graphite and ordinary cylinder oil. Six years later engine was replaced by another and steam pipe was taken apart easily with a 24-inch Trimo wrench.

Dixon's Graphite Compound is better than simply graphite and oil, yet as it is the flake graphite that does the real duty in preventing rust and leaks, the engineer who has a box of Dixon's Flake Graphite at hand can do away with red or white lead and be sure of better joints.

A SLY, BUT VERY WISE MAN.

A prominent engine builder confesses that the smooth running of all new engines installed by him is due to the fact that his erecting engineers are supplied with a pound or two of Dixon's Pure Flake Graphite, which is introduced into the cylinders and all bearings likely to become hot or cut. When the erecting engineer leaves everything is running smooth as velvet—no cutting, no groaning and not a squeak.

"Does the erecting engineer tell the regular engineer how this fine condition of things was accomplished, and recommend Dixon's Pure Flake Graphite for future use?"

"No, no!" was the reply.

"Why not?" was asked.

"Why, we are not fools enough to give away such a snap. We are often asked how it is we can get a new engine to run so smoothly and so cool in all its bearings, and we tell them it is a peculiarity of our engines, and this is why we sell so many, but we are not giving the snap away to other engine builders, or advertising Dixon's Graphite."

The above is a fact, but with names omitted. It should, however, be a hint to other engine builders.

SCENE—Second superior criminal court, second session. Hearing on the abolition of East Boston grade crossings in progress. M. O. Adams, president of the Boston, Revere Beach and Lynn Railroad, enters, selects a few sheets of paper, and turning to the *Herald* reporter, says: "Did I borrow a Dixon pencil of you yesterday and not return it?"

"No, sir."

"Well, I will to-day." And he did it.—*Boston Herald*.

Graphite

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JUNE 1902.

No. 7.

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A BELT DRESSING EXPERIENCE.

We have received the following letter from the manager of a light and heating company. The reading of this may prove interesting to users of belt dressing. We have omitted the name of our competitor.

“April 26, 1902.

“Some three years ago, the writer received a sample of your solid belt dressing. We had a 12 inch double belt driving an A60 HH alt., carrying about 40 amp. On applying dressing to belt, it increased the speed of the machine at once, although there was no apparent slip before. We then had our hardware merchant order a half-dozen sticks. Sometime after we purchased a 120 k. w. Westinghouse alternator and used this same belt to drive this machine with, the driver being 84 inches in dia-

meter and the driven about 17½; driver running 204 revolutions per minute. We had about 80 amp. at 1200 volts on this machine and had no trouble operating it with 20 inch sag in belt (center to center of shafts about 14 feet.) About this time we read so much about ‘——’ that we could not resist the temptation to try it.

“After clearing the belt in good shape, we put on a coat of ‘——’ as directed. The belt ran all right but the machine was a little slow. We put on several coats until the belt was ‘full’ but still it slipped, even though it was tight. About this time we had some very warm weather and on starting up at night the belt slid around so much that we could only get about 80 per cent. of the speed we needed. We opened all the doors and windows; this helped a little. We tried the belt loose and tight and could do nothing. We then telephoned to our hardware supply man for Dixon’s belt dressing and he had one stick left. Our manager brought it down, we applied it to the belt and in less than ten seconds had our machine up to speed. The balance of that can of ‘——’ is still at the W. E. L. & Pr. Co.’s plant, Washburn, Wis., and it is safe to say that as long as the present management remains, it will not be used.”

To gain his ends in Life's fierce tussle,
Man's two best friends are Hope and Hustle.—*Puck*.

A GIRL'S PENCIL.

“See that pencil?” remarked a man of an observing turn of mind, yesterday, as he picked up a short piece of lead pencil on Church street, “it was lost by a girl student.”

“As to why?” asked his friend.

“Easily answered,” was the reply. “That point was made by a girl, and she did not know how to handle a knife from the manner in which it is shaped. Those teeth marks show that she had the habit of chewing her pencil while studying, a habit which boys do not have, and the lead, I find, is hard, while it should be soft. The hardness is caused by her habit of continually placing the point in her mouth. Observe the girl students and you will find this to be true.”—*West Chester, Pa., Local News*.

THE VIRTUES OF GRAPHITE AS A PAINT PIGMENT.

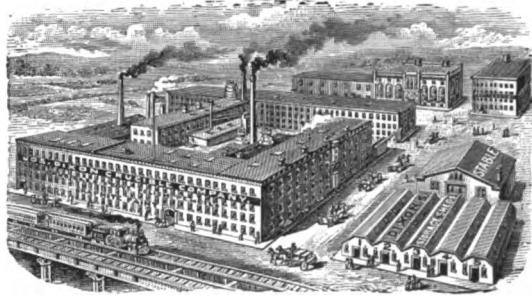
An English contemporary says that graphite paint is one of the most excellent preservatives which has ever been brought out for the protection of ironwork from rust. It is already very largely used for this purpose, especially for galvanized iron roofs and on railways; the paint has excellent covering power, and, being a natural lubricant, flows readily from the brush, so is very easily applied. It is non-poisonous, and unaffected by moisture, so that rain-water collected from the roof may be used for drinking quite safely. Owing to its much greater covering power, the cost of painting on iron with graphite paint is not greater than with oxide of iron paint; but there is no comparison possible as to their protective value against rust, the graphite paint being immeasurably superior to the oxide paint in this respect. If the rather sombre color is objected to, the first coat only may be of graphite paint, followed by two coats of some more decorative pigment, with excellent results.—*Paint, Oil and Drug Review*.

GAS AS A FUEL FOR BRASS FURNACES AND ITS EFFECT UPON THE LIFE OF CRUCIBLES.

One of our correspondents, in a recent letter, refers to his experience with gas as a fuel for brass furnaces, and says that he has found that gas in any form is not the best fuel for melting brass in crucibles, as it destroys these to such an extent as to more than over-balance any gain which might be made with a cheap supply of this fuel. In his opinion nothing equals coke for real economy, and we should like to have those of our readers who have had the experience of melting brass with gas or fuel oil, give their opinion on this subject.—*Foundry*.

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**GRAPHITE MINES AND MILLS AT TICONDEROGA, N. Y.
CEDAR MILLS AT CRYSTAL RIVER, FLA.**

OFFICERS:

**E. F. C. YOUNG, JOHN A. WALKER, GEO. E. LONG,
President Vice Pres. and Treas. Secretary.**

JERSEY CITY, N. J., June 1902.

GRAPHITES FOR AUTOMOBILES.

The vice-president of a prominent national bank over a thousand miles distant from the Dixon factory, writes as follows:

"Herewith please find a draft in your favor for \$1.50, for which please send me 75 cents' worth of No. 635 Graphite and 75 cents' worth of 'Graphitoleo.'

"These are the finest things for automobile work I have ever seen. I began to think the small sample cans you sent me were like the widow's cruse and would never run out, but the bottom is at last in sight."

We receive quite a number of similar letters, and are doing our best to get dealers in automobile supplies to carry Dixon's No. 635 Powdered Graphite and "Graphitoleo" and Pipe Joint Compound in stock, for the reason that these three are indispensable to automobile users.

AMERICAN TRAITS.

In a recent new book with the above title, the writer, one Hugo Munsterberg, tells of a young German, an acquaintance of his, who came to America to catch a glimpse of American life. The young German summed us up as follows: The good things were parlor cars, oysters, waterfalls, American shoes, autumn leaves, libraries, after-dinner speeches. The bad things were the monuments, politicians, boarding houses, spring weather, servants, street cleaning committee meetings, pavements, etc., etc.

The between-the-two were the newspapers, mince pies, millionaires, sleeping cars, furnaces, receptions and negroes. Then as to family life he drew the same lines. The good

were the American women, the bad were American children and the doubtful were the American men. This, in brief, is Bobby Burns' idea, seeing ourselves as others see us.

J. A. W.

GRAPHITE AND A "BUG GUN."

It is wonderful how the intelligent engineer will overcome all difficulties and find a means to every end.

Some time ago an engineer found the crosshead of a horizontal engine was running so hot that the guides and frame were hardly touchable. He used an insect powder or "bug gun" to blow graphite on the guides, and succeeded at once in getting the under one cool, and then by making a "dope" of machine oil and graphite, as the dry graphite would not stick, managed to get the upper guide cool.

The value of a box of Dixon's Pure Flake Graphite to the engineer is almost beyond computation.

The finely powdered (No. 2 flake) is more generally useful than the No. 1 or coarser flake, as it can be fed into the cylinder more easily.

Dixon's Pure Flake Graphite is used for the flanges of all hand-holes and man-holes, for coating gaskets so they will not stick, and for lubricating all bearings.

KEEP UP A GOOD APPEARANCE.

In these days of progress and expansion, engines, boilers and smoke-stacks are dismantled to make way for larger ones and the old equipment is usually put in the yard in order to be out of the way, where it awaits some buyer.

If not under cover, such iron work quickly takes on a very woe-begone and unattractive appearance. Such material can be made impervious to the action of the weather if painted with Dixon's Silica-Graphite Paint; not only will it be made impervious to the weather, it will have a far more attractive appearance and will meet with a much more ready sale.

Furthermore, all machinery that is laid up for the winter is better protected by a coat of such paint. We are reminded of this by an order from one of our customers in which he says:

"Please send us by express one gallon of Dixon's Smoke-Stack and Boiler Front Paint. This is intended for painting an old boiler all over, dome and all, also inside fire-boxes. The boiler will be laid up and we want it fully protected, and we know Dixon's paint will do it."

DIXON'S PAINT IN NEW ZEALAND.

In a letter received from the gas works at Wellington, New Zealand, we find the following:

"The shipment of Dixon's Silica-Graphite Paint arrived in good order. We like this paint and use it wherever we can on these works, although we shall never be a big customer, as our establishment is not very large, but we are increasing our business. We expect to send out this year 130,000,000 cubic feet of gas, as compared with 118,000,000 cubic feet last year."

"Wishing you success, we are—"

THE DETROIT GRAPHITE LUBRICATOR.

The Detroit Lubricator Company, Detroit, Mich., is now manufacturing the lubricator invented by Mr. A. D. Homard and it will hereafter be known as the Detroit Lubricator. Their circular reads as follows:

"The Detroit Graphite Lubricator is intended to be used in connection with the regular locomotive oil cylinder lubricator, and is attached directly into the steam chest. It is equipped with fitting, shown in section to the right of the sectional cut, which connects with the tallow pipe leading from the oil lubricator in the cab, so that both the oil and the graphite pass into the steam chest through the same opening. The side connection contains our automatic steam chest valve, used in connection with our No. 3-C locomotive oil cylinder lubricator.

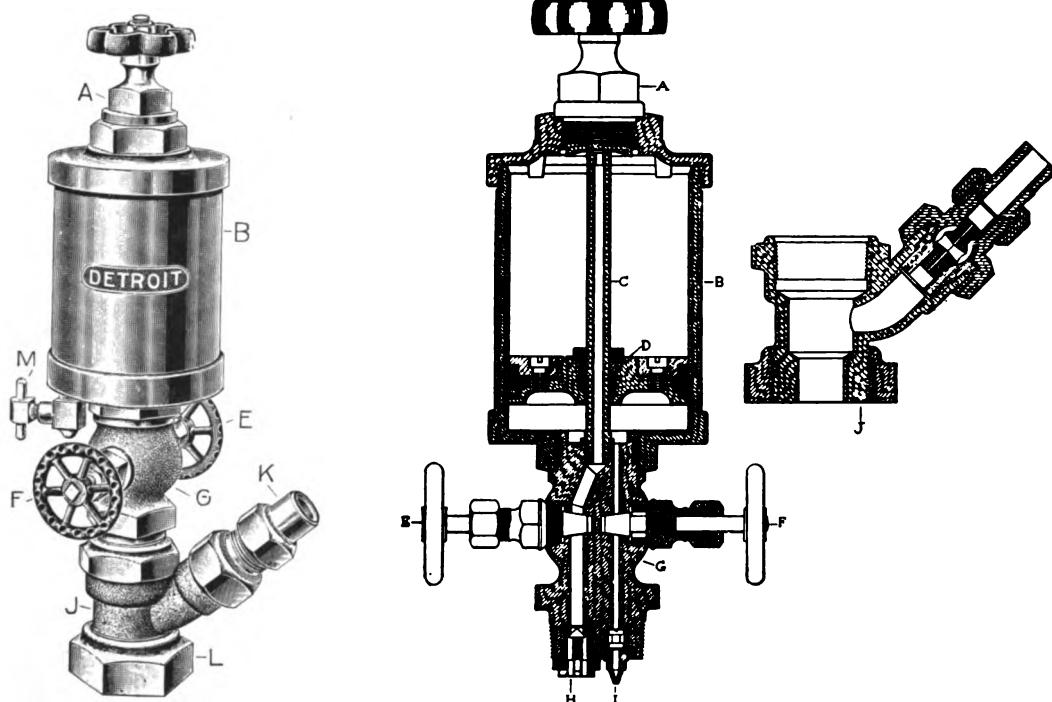
The body of the lubricator is fitted with a piston *D*, which is free to move upwards and downwards, and there is but a very small space, about 1-64 in., between the top

automatic valve *I* seats downwards, preventing the condensed water below the piston from escaping. At the same time, the suction or vacuum in the cylinder will draw down the small amount of graphite above the tube *C*. When the throttle is opened again, the steam pressure is again exerted on the lower side of the piston, and more graphite is forced into position above the tube *C*. Thus every time the throttle is closed and a vacuum created in the cylinder, a small quantity of graphite is drawn down into the steam chest.

ADVANTAGES.

The lubricating qualities of graphite are universally acknowledged, the difficulty heretofore existing having been the want of an apparatus which would feed it steadily and regularly. It is not affected by acids, alkalies, cold or heat, and is particularly well adapted for use on the modern high-pressure locomotives.

Our graphite lubricators hold about $\frac{3}{4}$ lbs. of graphite



A—Filler Plug. *B*—Body. *C*—Interior Tube. *D*—Piston. *E*—Graphite Valve. *F*—Steam Valve. *G*—Support Post. *H*—Automatic Feed Valve. *I*—Automatic Water Valve. *J*—Connection to Steam Chest. *K*—Connection to Tallow Pipe. *L*—Jamb Nut. *M*—Drain Valve.

of the central tube *C* and the filler plug. The automatic valve *H* seats upwards, thus preventing the steam from entering the tube *C*. The automatic valve *I* seats downwards, thus allowing the steam to enter and condense in that portion of the body below the piston while the valve *F* is open.

ITS OPERATION.

Fill the lubricator with graphite and open valves *E* and *F*; then, as soon as the throttle is opened the steam will pass up through the automatic valve *I* and condense. The steam pressure acting on the condensed water and the under side of the piston will be communicated to the graphite, and the small space between the filler plug and the top of the tube *C* will be filled with graphite. Then, when the throttle is closed and the engine is drifting, the

each, and are intended to feed the Dixon Flake Graphite, No. 1 size. One pound of this graphite is sufficient for a mileage of from 1,500 to 1,800 miles. Its use contributes to a better mileage for the oil, and the hauling power of the engine is very materially increased. The regular use of graphite as a lubricant also operates to prevent to a very considerable extent the wear of valves and cylinders, and to reduce the expense of maintaining the engines in good working order."

THE SALESMAN A MODERN MISSIONARY.

The drummer gives values for favors received. And he does a great deal more than that. He is the best agent of our modern civilization. He is the missionary of enterprise and the promulgator of knowledge. He stimulates laggard

communities, supports the world's hotels, saves the railroads from annual bankruptcy, distributes the newest facts and keeps old stories moving. There is in his speech some of the best action of the times. He seldom hedges. He wastes little time. He goes to the point. He has purpose. The world's professional orators might sit at his feet with profit.—*The Philadelphia Times.*

GRAPHITE IN ICE PLANT.

Mr. Hiram F. Post, business manager of the University of Illinois, writes us as follows: "I received the samples of Dixon's Flake Graphite and used them on the engine and compressor in the University ice plant with the result that we have been using Dixon's Graphite ever since.

"We had, previous to the time I wrote for samples, been using the coarser flake graphite, but had some difficulty with it because it clogged packing rings in valves, and rings on piston. This trouble, however, is done away with since we use the finer flake.

"We have just completed a test of the ice plant, and all during the test we used Dixon's Graphite with excellent results."

A SOLILOQUY.

DONE INTO RAGTIME BY HAND, WITHOUT REDRESS, AND IN FULL VIEW OF THE PUBLIC.

Look on me!
I am Paint,
Dixon's Paint—
Silica-Graphite Iron Paint;
Not paint made of iron,
But paint made for iron,
Which wears like iron—
Its chest protector and its cup defender.

I come between
The weather and any old thing
Made of iron
That may, might, can, would and should
Be painted with me.

I am that Silica-Graphite,
Green or slate,
Red or black, *rouge et noir*,
On which you take no chances,
Which is a lead pipe cinch
And a standpipe cincture.

I am IT—
Rust-repeller—
Weather-worrier—
Climate-clincher—
Damp-discourager—
Acid-annihilator—
The whole team and the dog
Under the wagon.

Whether there be weather which lasts
Only a few days,
Or climate which continues
All the time, I say
"Move on! Go

Away back
And sit down,
For you can't get by
Silica-Graphite Paint. Not
By a jugful or a kegful."
Rears there a stack
Its smoky head,
Which is not prey to rust
And damp,
That ever to itself hath said,
"The weather never touched me,"
You will find me on the surface.
No iron
On this earth,
Or under it, or in the blooming
Atmosphere above it,
Or in the gurgling
Waters beneath it,
Can long stand off
The corroding tooth of time
Or the lust of rust
Without me.
I prolong their lives.
I am the giver of longevity to tanks,
And stacks, and pipes, and beams,
And girders, and bridges
That span pellucid streams.
I am the only Silica-Graphite Paint
Which sticks to iron, thro' thick
And thin,
Fair weather and foul;
Which doesn't chalk or peel,
Or cake or crumble,
But which continues to do
Business
At the old stand
All the time.
That's me.

THE RAG TIMER.

GRAPHITE FOR SAW-TABLES.

Dixon's Graphite has been found exceedingly useful for lubricating saw-tables. A small quantity of graphite is sprinkled on the tables occasionally, and it makes the plank handle very much easier. This is especially true when sawing heavy green planks.

DIXON'S GRAPHITE FOR TALKING MACHINES AND PHONOGRAPHS.

During several years past the Dixon Company has sold its No. 635, dry, finely pulverized graphite, and Dixon's "Graphitoleo," to manufacturers and users of talking machines, phonographs, gramophones, and other machines of that character.

The graphite is used for lubricating the coiled springs.

The introduction of Dixon's Graphite between the coils of the spring, prevents both the binding of the spring and the humming or whirring sound which is sometimes produced when the springs are unwinding.

Graphite

VOL. IV.

JULY 1902.

No. 8.

Issued in the interest of Dixon's Graphite Productions, and for the purpose of establishing a better understanding in regard to the different forms of Graphite and their respective uses.

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THE PAYING OF BILLS.

The paying of bills varies quite as much as the amounts. Some send the money before they get the goods, some ask us to send C. O. D. Some pay as soon as they receive the goods, others pay at the time agreed upon,—or go over. When they do go over there is no certainty where they will go unless checked up. If you put on the brakes, as it were, and bring them up too suddenly, there is friction that even flake graphite won't overcome, and they get mad and say things.

Then there is the financial man who goes away and does not provide for the payment of bills while away; he seems to overlook the fact that some other poor devil needs a vacation and is waiting for the wherewithall to come in.

There is the man who pays no attention at all to statements, letters or drafts. By and by we get provoked, especially during the heated term, and say things that we wouldn't otherwise. But the things said seem to have no effect and the account goes to our lawyer. In due time the lawyer sends us the much-wished-for and much overdue check and charges us 10% for collection, or the lawyer writes that the debtor has mailed check, and behold! a check comes in same mail from the man and with it a letter wondering why we should have put the matter in a lawyer's hands. Considering that we had sent the man several statements and drawn on him at least twice and written that unless we heard from him we would be compelled to send the long overdue account to our lawyer, it seems a little curious what the man could have expected.

GOLFAYAT.

Some take a Brassey when they play the Game,
Or with a Cleek carve out the way to Fame;
And Some there be who but a Pencil-Stub
Have used, and yet have Got There just the same.

—Golf News.

Harold: "What did she say when you turned out the gas and kissed her?"

Rupert: "Said she felt as if she never wanted to see my face again."—*Puck*.

GRAPHITE FOR CYLINDER OF BLOWING ENGINES.

One of the Dixon representatives writes us that he has some fear that we may lose one of our customers who has lately sent for a sample barrel of cheap Graphite for use in a cylinder with blowing engine, with a view of considering its future use.

In our own behalf we would like to say a few words about the great pains and professional attention and serious work we have put in these many years on Dixon's Pure Flake Lubricating Graphite.

We have foreseen its universal use, have rigged up our machinery accordingly, and, independently of what has been done elsewhere, we have striven to make an absolutely pure Graphite, and have succeeded.

We know that the cylinder of an engine is an expensive piece of work, worth many hundreds of dollars; sufficient Graphite for the proper lubrication of the cylinder for the time being costs only a few cents, and we are confident that it will not pay any one to run the risk of damaging the cylinder for such a small difference in the cost between what is known after years of trial to be a satisfactory and pure graphite and a cheap and untried graphite.

Probably when the price per pound is compared, it may seem quite a difference, but when one considers the small quantity that will do the work, the difference is hardly observable.

We have been through this experience so many times with so many furnaces, and always resulting in our favor, that we think perhaps it is only fair to all parties to thus publicly give the benefit of our experience. Every one tells us that a cylinder is an expensive piece of work that one cannot be too careful with, and we, the manufacturers of graphite, cannot be too careful in preparing the graphite. We take all possible pains in the preparation of this graphite; we get it absolutely clean, so that even the most delicate machinery is not harmed by its use.

The writer was at the Krupp factory in Germany, where Dixon's Flake Graphite is used, and the superintendent there mentions that the cost of their cylinder lubrication with Dixon's Graphite is so small in comparison to its great value that it is not worth while to talk about the price at all.

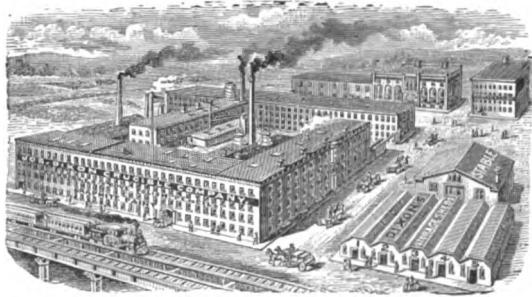
It is impossible to produce as fine a Flake Graphite as the Dixon Company produces without asking the price that the Dixon Company charges.

It is fatal to the life of a cylinder to use graphite containing grit.

J. A. W.

ESTABLISHED 1827.

INCORPORATED 1868.



JOSEPH DIXON CRUCIBLE CO., JERSEY CITY, N. J., U. S. A.

SALESROOMS AT

**68 Reade St., New-York. 1020 Arch St., Philadelphia.
304 Market St., San Francisco. 26 Victoria St., London.**

RESIDENT REPRESENTATIVES AT

**Boston, Chicago, St. Louis, Pittsburg, Paris, Hamburg, Vienna,
Amsterdam, Brussels, Berlin, Dresden, Milan, Lisbon, Copenhagen,
Warsaw, Barcelona, Bergen, Horgen (Switzerland), Finland.**

**GRAPHITE MINES AND MILLS AT TICONDEROGA, N. Y.
CEDAR MILLS AT CRYSTAL RIVER, FLA.**

OFFICERS:

**E. F. C. YOUNG, JOHN A. WALKER, GEO. E. LONG,
President. Vice Pres. and Treas. Secretary.**

JERSEY CITY, N. J., July 1902.

AMERICAN VERSUS ENGLISH OUTPUT.

The Westinghouse Electric Co. are building a mammoth plant at Manchester, England. A St. Louis, Mo., contractor has charge of the construction. He has a half dozen young American assistants and 3,758 British workmen.

The average English bricklaying per man of old was 400 a day. Under the St. Louis man's supervision the quota was lifted to 1,800 bricks laid per man. Comment is unnecessary.

J. A. W.

A CHANGE.

At the beginning of the 19th century a clergyman was the foremost man in the community. Everywhere he stood highest and first. Later the lawyer drew into the front rank and exceeded the clergyman in current esteem. The next step was that the statesmen were chiefly recruited from the lawyer ranks. These things determined the movement of talent. First the brainy young man became a minister, later a lawyer, and still later a statesman. Now a new element comes in and the public eye is on the business man. He is called a "captain of industry," and to his ranks now come the young men of brains. J. A. W.

COVERING STEAM PIPES.

An exhaustive recent comparative trial of properly covered versus bare steam pipes showed for the best covered pipes a condensation of $13\frac{1}{2}$ lbs. per hour, whereas in the bare pipes the condensation was $55\frac{3}{4}$ lbs. per hour. This means cover your steam pipes.

J. A. W.

INTELLECTUAL POWER PLANT.

This heading is a very neat phrase, and was used in a recent article in "*Engineering*."

In a big industry the steam power plant cuts a big function, but the idea of the writer in "*Engineering*" was that for supreme success the intellectual power plant must overtop all—which, being put in the ordinary vernacular, means that everywhere in the governing of the industry brains must rule—in the management of the branches, in the departments. Down to the smallest sphere where one man tells another what to do a lot of thinking should go on. The Standard Oil successes meant better thinking than other oil companies did. Carnegie and his associates outclassed his rivals in thinking correctly with the consequent result.

To forecast the future and foresee its needs before your neighbor means thinking; to foresee the lines of coming prosperity and get ready for it needs thinking; to foresee the clouds and prepare for the lean years takes thinking.

Think properly, study. Study and energy guided by good thinking inspires the force around you. Then, with your thinking cultivated, the information gathered, the energy harnessed, put on the steam, get everybody up to white heat, and the very laws of the universe work for you, sleeping or waking.

J. A. W.

DIXON FOREVER.

The other day we received a letter from a certain foundry, to wit, that the Dixon crucibles were behaving badly. We replied, saying, send us one or two by return freight, that we may see them ourselves. The following week the two crucibles arrived, and on opening the package they were found to be those of another maker of crucibles, and not Dixon's.

The next day we received an envelope sample of blacklead from a certain customer, saying we had just filled his order for five barrels, and the blacklead thus received was no good. Examining the sample, it was found to be blacklead supplied by someone else; something that we had never seen before; something of a kind that we do not produce.

Another day, lately, we received word that a crucible shipped by us in the month of February, this year, was out of order in some way,—not doing the proper work,—and we wrote to have this one come back. It came back in due time, and was identified in our works here as a crucible that had been made and shipped and used by these particular people at least three years ago. The matter of that particular crucible of three years old had been thrashed out before.

We recite these as business curiosities not only, but to show that wherever crucibles, pencils, blacklead, graphite, etc., etc., are mentioned, the first and almost only name is that of Dixon's.

J. A. W.

COMPETITION.

Salesmen see and hear more of competition than those of us who stay at home, and its vital touch is more impressive than its hearsay. In reporting it the salesman

usually conveys by the tone of his letter the wish that it was not there.

But competition has its good side, even for the salesman. He would not be half the man he is if he were not continually "up against" a foeman worthy of his steel.

Competition reported makes his house strive even harder to produce a better article. Competition makes taut all the lines and improves all who feel its influence. By competition we mean strife over quality of wares, because we take no notice of competition in price. When the day comes that Dixon goods are not the best in the market, we will not cut prices but will improve the goods. J. A. W.

"THE TRUST BUGABOO."

The trusts monopolize too much of popular attention—what they say and what is said of them is seriously out of proportion with their comparative size.

For instance, the census of 1900 shows 1,200,000 business firms in the United States, and the trusts (so-called) are only 183. The total business of the country is estimated by the same census at about \$14,000,000,000—the business done by the trusts is about \$1,600,000,000, a little over only of one-tenth of the total; so that nine-tenths of the business of the country is done ex-trusts. The wage earners of the United States number 24,000,000—the wage earners of the trusts about 400,000. These big people strut and put on more airs than their size warrants.

J. A. W.

HOW IS THIS?

The books say that lead pencils are a modern device. Marking by lead pencils was not done earlier than 1664 A. D. Sometime ago at the Victor Hugo play in a New York theatre of the Hunchback of Notre Dame, scene laid in 1482, one of the parties to a play in one of the scenes wrote a current document with a lead pencil. Who made lead pencils in 1482? J. A. W.

SOME CHINESE BUSINESS RULES.

With a lady customer he must, under no circumstances, be merry or enter into a flirtation.

When a new customer comes to open an account the clerk must ask his name, his address, full particulars as to his personality, including the asking of his age.

One-third part of the clerk's conversation to be assent and approval of what the customer says.

Be polite, whether the customer is a prince or a beggar.

In doing business never let the conversation lapse. Should it pause, find at once a new topic on which to revive the "talkee, talkee." J. A. W.

DIXON IS A "BIG INGIN."

A small thing shows the size of the Dixon Co. One day last week four men from our office met in Pittsburg, Pa. Each represented a different department of the business, and by a coincidence wheeled together into Pittsburg in pursuit of business. Neither knew the other was due there, and each works a different line—each independent of the other. J. A. W.

Productions of the Dixon Crucible Co.

Dixon's Black-Lead Crucibles and Retorts.

All sizes and for all purposes. Bowls, Dippers, Stirrers, Stoppers, Nozzles, Muffles, Sleeves, Etc.

Dixon's Brazing Crucibles.

Made in several shapes for dip-brazing.

Dixon's Graphite Boxes and Covers.

For baking carbons and filaments for electric lighting.

Dixon's Fine Office and Drawing Pencils.

Unequalled for smooth, tough leads and uniformity of grading.

Dixon's Colored Crayons.

In wood or solid. For schools, railroads, editors or factory.

Dixon's Lumber Leads.

Black or colors; for green or dry lumber.

Dixon's Felt Erasive Rubber.

For erasing pencil marks, type-writer work, or ink.

Dixon's Carburet of Iron Stove Polish.

The old reliable; in cake or bulk form.

Dixon's Pure Flake Lubricating Graphite.

A solid lubricant for all frictional surfaces.

Dixon's Special Graphite No. 635.

For lubricating cylinders of gas engines and all close or delicate mechanical parts.

Dixon's Electrotyping Graphite.

Used by the majority of practical electrotypers of this country.

Dixon's Hatter's Lead.

For coloring hat bodies.

Dixon's Plumbago for Shot Polishing.

Dixon's Plumbago for Powder Glazing.

Dixon's Plumbago Foundry Facings.

Dixon's Yacht Plumbago.

For lubricating and smoothing bottoms of yachts.

Dixon's Graphite Waterproof Grease.

For gears, wire ropes, hoisting chains and general machinery.

Dixon's Graphite Axle Grease.

Better and cleaner than castor oil for trucks, wagons, carriages.

Dixon's Graphited Wood Grease.

For use on trolley car gears which are enclosed in a gear case.

Dixon's Graphited Oil.

For use in all places where the use of a grease is impracticable.

Dixon's Graphite Cup Greases

For use in cups or open bearings, on spindles, shafting, etc.

Dixon's Oiled Graphite

Dixon's Lubricating Compound No. 688.

For enclosed gears of electric automobiles.

Dixon's Silica-Graphite Paint.

For metal or wood-work, roofs, bridges, telegraph and trolley poles, smoke-stacks, boiler fronts, and iron construction work.

Dixon's Graphite Pipe-Joint Compound.

For steam, gas and water piping, smearing gaskets and flanges.

Dixon's Cycle Chain Graphites.

For perfectly lubricating chains and gears of bicycles.

Dixon's Graphitoleo

For lubricating bicycle chains, sprockets, pivots and pins; gun locks, and for general use.

Dixon's Commutator Graphite

Will glaze the commutator with the finish so much desired by electrical engineers.

Dixon's Anti-Flux Brazing Graphite.

To prevent the spelter from adhering when brazing.

Dixon's Crucible Clay and Graphite Mixture.

For lining and repairing furnaces and fire boxes.

Dixon's Stove Cement.

For repairing stove or range lining.

Dixon's Traction Belt Dressing.

For preserving leather belts and to prevent slipping.

Dixon's Solid Belt Dressing.

Convenient for those who prefer a solid dressing.

Dixon's Graphite Resistance Rods.

From one-eighth to one inch diameter; any resistance required.

Dixon's Graphite Products for Electricians.

Special circulars with detailed information sent on request.



OUR BOSS GOES TO EUROPE.

Mr. John A. Walker, Vice President, Treasurer and General Manager of the Joseph Dixon Crucible Co., sailed for Europe on June 17.

When at home, Mr. Walker gives twelve or fourteen hours of the day to Dixon's work, and while in Europe he will do no less, but rather more, as the trip will be at least three-quarters business.

He will spend most of the time at the Company's London branch and in business visits to the various Dixon agencies on the continent.

We wish him *Bon Voyage!* and safe return.

Auf Wiedersehen! Au revoir! Hasta la vista! See you later!

THE POET AND THE DIXON PENCIL.

It now would surely seem,
If F. G. B. have a gleam
Of courage in his soul,—
A spark
Of hope should light the dark
Of drudgery in his life,—
Illuminate the strife
And "point" him to the goal;
No longer should he mope,
No longer should he grope
His listless way to the light,
Half-afraid to the thick of the fight,
But, like old Greece's heroes stand,
With a sharpened spear within his hand,
And boldly—"makes his mark."

GRAPHITE PAINT FOR GAS HOLDERS AND STAND PIPES.

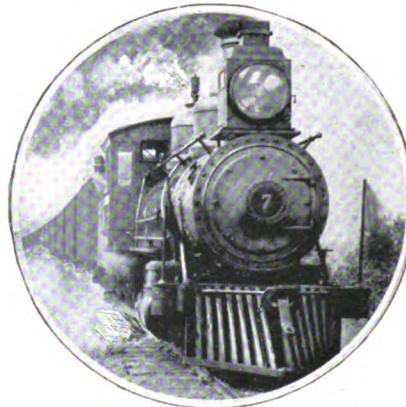
Mr. John A. Condit, one of the Dixon representatives, while in Ohio, wrote us as follows:

"Dixon's Silica-Graphite Paint is extensively used in Ohio for gas holders and stand pipes. I was in Delaware, Marion and Galion last week; all of these towns have stand pipes painted with Dixon's Silica-Graphite Paint, and all are doing well.

"At Delaware the stand pipe was painted seven years ago and has not been repainted, although they expect to give it another coat in October.

"In Delaware they paint the gas holders every two years with Dixon's Silica-Graphite Paint, believing that a systematic painting is the best provision and protection against any corrosion that may take place."

FLAKE GRAPHITE FOR THE LOCOMOTIVE.



Gives free and easy action to valve motion.

Reverse lever can be held in one hand, even when full boiler pressure is used.

The wear of link and valve motion is reduced to a minimum, and the hauling capacity and life of the locomotive greatly

increased.

Engine will work two or three notches closer in cut-off, effecting a saving in fuel and water, and in cylinder and valve oil.

It prevents "squealing" of air pumps and "groaning" of cylinders.

Dixon's Pure Flake Graphite *will* do all this and more, because it *has* done it whenever and wherever tried.

DIXON'S GRAPHITE AXLE GREASE.

With Dixon's Pure Flake Graphite as a basis and with refined petroleum and tallow as a vehicle to carry the graphite to all parts of the bearing surfaces, Dixon's Graphite Axle Grease may well be claimed the finest axle lubricant in the world.

With the use of Dixon's Graphite Axle Grease there is no corrosion of axles, and where ball or roller bearings are used the freedom from rust or corrosion is a marked economy.

Express and baggage companies and brewers have found Dixon's Graphite Axle Grease the most economical lubricant obtainable.

STOP FUSSIN'.

Fussin' at de worl'
En a-frettin' in yo' soul,
'Spose you wuz a-burnin',
En de devil shovelin' coal?
Bimeby,
Bimeby,
You'll be whar de big waves roll!

Fussin' at de worl'
En a-groanin' 'bout yo' woes,
'Spose de devil had yo'
Whar dey never turn de hose?

Bimeby,
Bimeby,
En de big fire'll seorch yo' cloze!
—Atlanta Constitution.

Graphite

VOL. IV.

AUGUST 1902.

No. 9.

Issued in the interest of Dixon's Graphite Productions, and for the purpose of establishing a better understanding in regard to the different forms of Graphite and their respective uses.

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DIXON'S SILICA-GRAphITE PAINT FOR STEEL CARS.

In meeting the requirements for the maintenance of steel cars proper painting with a durable coating for the metal is of vital importance. Although the steel car industry is yet in its infancy this fact has already been demonstrated.

A railroad official recently informed the writer that several hundred steel cars owned by his company had caused considerable trouble on account of corrosion due to the fact that the paint, which was applied about a year ago, had failed to protect the sheets of pressed steel. As a result the cars will have to be thoroughly scraped and repainted.

On looking up the paint specifications in connection with this case, it was discovered that two coats of paint were called for, but no particular paint was designated. By this practical but costly test to his company the official was convinced that the paint used was of inferior quality.

At the meeting of the New York Railroad Club in February, an interesting paper pertaining to the best methods in shop practice in meeting the requirements for the maintenance of all steel cars and probable future shop changes necessary, was read by W. S. Morris, Superintendent of Motive Power of the Chesapeake & Ohio R. R. In reference to painting Mr. Morris said: "It is presumed that those handling steel cars have by this time come to the realization that protection of metal cars from weather and acid attacks is necessary; while it is true the comparative greater tonnage, carried with less percentage of care, enhances the worth of the pressed steel car, its life may be prolonged in preventing oxidation by thorough painting at proper intervals. The better body the covering has and the better affinity established between the metal and the covering of paint, the more effective and lasting the protection."

The subject brought out some interesting facts and we quote the following from Prof. Hibbard, who spoke of the use of red lead paints:

"It may not be generally known that red lead paint swells in the presence of sulphur, and in swelling it increases in volume about one-third, thus tending to peel off,

and it seems to me that the parts of the steel car exposed to sulphur by leachings through coal or sulphurous ore, or by sulphurous smoke, ought to be painted with something else than red lead, for instance, with graphite and purest linseed oil, the inert graphite tending to protect the steel, perhaps on account of the minute flakes lapping over one another like the shingles on the roof of a house."

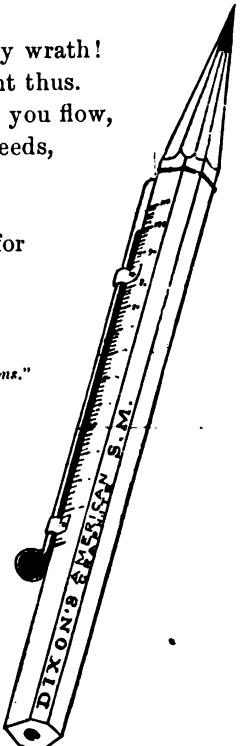
As a protector of steel Dixon's Silica-Graphite Paint is without a rival for durability. Its use on steel cars and hundreds of railroad viaducts throughout the world proves that it will last longer than any other paint.

The cost of the paint is saved many times over by making frequent repainting unnecessary. While one considers that the cars can thus be kept in excellent condition for service for years, it is clear that the advantage gained is of great importance to railroad men anxious to win the race which comes with close competition.

SUMMER.

All conquering Heat, O, intermit thy wrath!
And on my throbbing temples potent thus.
Beam not so fierce! Incessant still you flow,
And still another fervent flood succeeds,
Pour on the head profuse. In vain
I sigh,
And restless turn and look around for
night;
Night is far off: and hotter hours
approach.

—Thomson, "The Seasons."

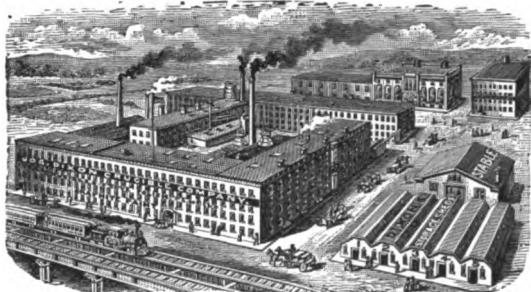


One of the Dixon teamsters while in New York the other day was obliged to stop for repairs. When he returned the bill read:

"Tyning hein shoe 35 cents."

ESTABLISHED 1827.

INCORPORATED 1868.



**JOSEPH DIXON CRUCIBLE CO.,
JERSEY CITY, N. J., U. S. A.**

SALESROOMS AT

**68 Reade St., New-York. 1020 Arch St., Philadelphia.
304 Market St., San Francisco. 26 Victoria St., London.**

RESIDENT REPRESENTATIVES AT

**Boston, Chicago, St. Louis, Pittsburg, Paris, Hamburg, Vienna,
Amsterdam, Brussels, Berlin, Dresden, Milan, Lisbon, Copenhagen,
Warsaw, Barcelona, Bergen, Horgen (Switzerland), Finland.**

GRAPHITE MINES AND MILLS AT TICONDEROGA, N. Y.

CEDAR MILLS AT CRYSTAL RIVER, FLA.

OFFICERS:

**E. F. C. YOUNG, JOHN A. WALKER, GEO. E. LONG,
President. Vice Pres. and Treas. Secretary.**

JERSEY CITY, N. J., August 1902.

A BREEZY LETTER FROM "SUNNY SAN JUAN."

"Let a New York man start in for the West and come down the Ohio Valley, and he will wish the strike would keep some of the people at home or that something would strike real estate and hotel managers, and induce them to put up accommodations sufficient for all travelers. In no town in all the Ohio Valley will a man find a place to sleep unless he has given previous notice of his coming. With all of the excursionists, conventionists, tourists, etc., added to the regular commercial crew, a man will conclude that Old Prosperity is doing business with every rank and file.

"Again, at the Mississippi Valley and over as far as western Nebraska, the traveler will conclude that Old Prosperity and Old Humidity formed a co-partnership during June to the entire satisfaction of all green things, for such verdure and such a wealth of good things with promise never stood upon this part of the earth before; and now that July has started in to give the needed finish of bright days, we can count on a wheat and corn record unknown in years, with small crops galore.

"From the Missouri Valley to and through the mountains, every desirable and suitable place is already thronged with tourists from every town, city and country.

"Those who enjoy July dividends will find out here another dividend that will give royal equivalents in added health and years.

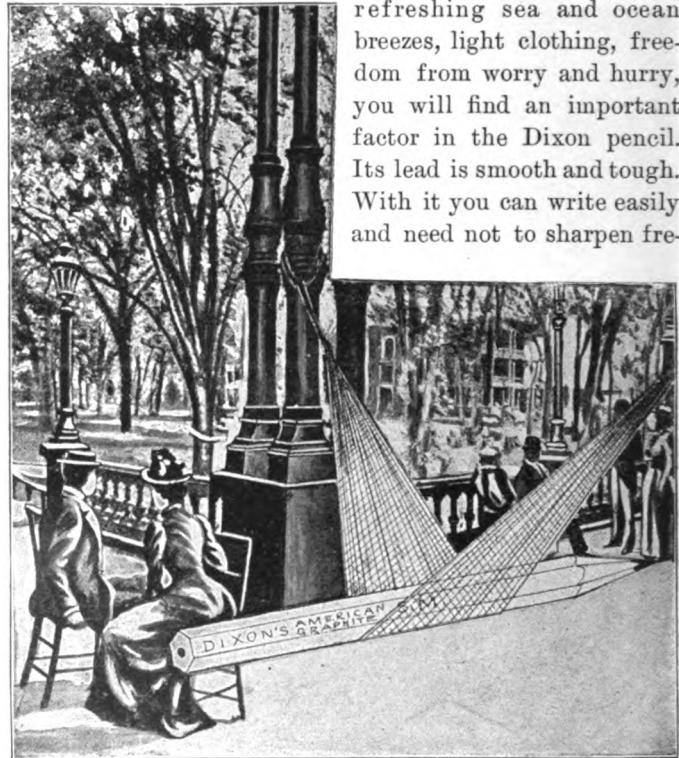
"A few days more, and we shall have all uncertainties turned into certainties and crop equivalents going into every conceivable implement of utility and progress, from

the plow to the piano, at a record of distribution unsurpassed, filling the land with a joyous acclaim—'Oh! we are all right!'"

AUGUST.

This is going to be a hot month, and humanity will strive in every way to keep comfortable.

Added to cooling drinks, refreshing sea and ocean breezes, light clothing, freedom from worry and hurry, you will find an important factor in the Dixon pencil. Its lead is smooth and tough. With it you can write easily and need not to sharpen fre-



quently, and in a number of ways its influence is comforting.

Then it is a necessity as part of a traveling equipment. Wherever you may spend the summer, you are likely to have plenty of leisure time to be filled up in writing to friends, or sketching, and you might rather be without your watch than to be without a good supply of the Dixon pencils—black and colored leads.

SUSAN SIMPSON.

Sudden swallows swiftly skimming,
Sunset's slowly spreading shade.
Silvery songster sweetly singing,
Summer's soothing serenade.
Susan Simpson strolled sedately,
Sifting sobs, suppressing sighs;
Seeing Stephen Slocum, stately
Stopped she, showing some surprise.
"Say," said Stephen, "sweetest sigher;
Say, shall Stephen spouseless stay?"
Susan, seeming somewhat shyer,
Showed submissiveness straightway.
Summer's season slowly stretches,
Susan Simpson Slocum she—
So she signed some simple sketches—
Soul sought soul successfully.

—From "The Pennin Stenographer."

HE HAD THOUGHT OF IT.

"Did it ever occur to you that thousands of people on earth die every day?" asked the parson.

"Yes, parson, it has," replied the party addressed, "and, what is more, it has set me to thinking."

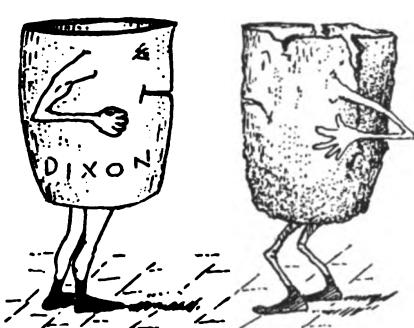
"Indeed!" exclaimed the good man. "And what has been the result of your meditations?"

"I have come to the conclusion," answered the other, "that living is a dangerous thing."—*Chicago News*.

A CRUCIBLE RECORD.

We have a report from a large crucible user for three months, of 33, 35 and 38 heats respectively, average run of Dixon crucibles.

We have another report from another consumer, saying in the last nine years they had used all makes of crucibles, and Dixon's at the present time were beating anything they ever had. The last ones used, size No. 80, were averaging 42 heats. This ought to be so because the Dixon Company are now using the best materials that skill can select and money can buy, paying high prices in order to get good stuff and sparing no pains in any way, shape or form, in every detail of manufacturing.



AFTER THE TRIAL.

DIXON: "Well, old man how did your trial come out?"

OTHERMAKER: "I had a tough time of it. The judge charged me heavily, and I simply broke down and went to pieces—lost everything."

DIXON: "Don't give up yet. I have been through fifty times more punishment than you, and am still all right and ready for business."

OTHERMAKER: "Yes, that's all right. You come of good stock and pedigree, and you bear an old and honorable name, while I never had a chance to be successful; it isn't in me. I wonder why I was ever created."

DIXON: "You are about right. You have no place in this busy, exacting world."

AMERICAN VERSUS ENGLISH ACTIVITY.

Americans gave an exhibition of what they could do in the way of rapid construction at the Paris Exposition, when they astonished the Frenchmen by showing how quickly ten men could set up a steel frame building on the Exposition grounds. A much more striking exhibition was given in the erection of the Westinghouse works in Manchester, with British labor under American direction. Incidentally

American bridge-building in Egypt and South Africa and Burmah, has afforded considerable education to foreigners. Owing to these demonstrations of American activity a Philadelphia firm has received contracts for the erection of ten blast furnaces for three English and Welsh iron companies. Four of these will be at Cardiff, four at Middlesboro and two at Blackhills. The capacity of these furnaces is not stated, but as American furnaces run much above the English in dimensions, and most of the modern ones range in capacity from 300 to 700 tons a day, there is no doubt that one reason for giving the contract to Americans is to get the benefit of their experience in building furnaces much larger than Englishmen are accustomed to. The contractor with a corps of American engineers and workmen has already sailed for England. It is said that the execution of this contract will take five years, but we venture the opinion that this is an estimate made in England, and that the American contractor will have those furnaces ready for fires in a small part of five years.—*The Journal of Commerce*.

ROUGH RIDING ENGINES.

"*Railway and Locomotive Engineering*" states that a very common cause for rough riding is dry, or partly dry, wedges, and adds that graphite mixed with the oil when applied to the wedges one to fifty miles, will be found a royal remedy for rough riding.

HER VIEW.

A little three-year-old miss, while her mother was trying to get her to sleep, says "*The Chicago News*," became interested in a peculiar noise, and asked what it was.

"A cricket, dear," replied her mother.

"Well," remarked the little lady, "he ought to get himself oiled."

"OR ELSEWHERE."

A letter was sent to us from Boston addressed:

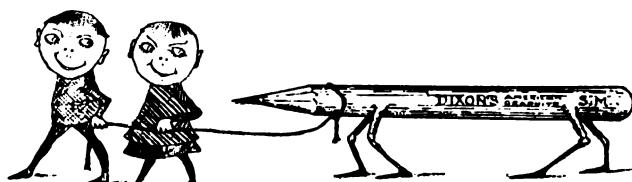
"The Dixon Crucible Co.,
Boston, Trenton,

"Or elsewhere. Mass. N. J."

We got it all right, as Uncle Sam's Post Office officials always know where to find Dixon.

A NEW DIXON PENCIL.

The Dixon Company has put on the market a new flat pencil, known as Dixon's Palisade No. 1580. It is finished in a handsome yellow and is specially convenient, as its shape takes up little room in the pocket, and it can be used by magazine readers as a paper cutter, and by all readers as a book mark. A sample will be sent to those who favor us with a postal request.



A LEAD PENCIL.



Entrance Gates, Residence Wm. L. Elkins, Ogontz, Pa.

Painted with DIXON'S SILICA-GRAPHITE PAINT for protection and effect.



A Section of the New York Dock Co.'s Stores, Brooklyn Water Front.

THE WEALTH of production of all the countries of the world is represented in the contents of the two and one-half miles of store-houses of the NEW YORK DOCK CO., which extend from the Brooklyn Bridge to the Erie Basin, New York Harbor. The principal import and export business of the United States is handled from the piers of this Company.

DIXON'S SILICA-GRAPHITE PAINT

gave a service of **nine years** on the iron shutters of one of these stores. Its resistance to the mechanical action of derrick chains, crowbars used in closing shutters, and corrosive action of sea air, secured its use this season for repainting the thousands of shutters on these buildings.

Graphite

VOL. IV.

SEPTEMBER 1902.

No. 10.

Issued in the interest of Dixon's Graphite Productions, and for the purpose of establishing a better understanding in regard to the different forms of Graphite and their respective uses.

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JOHN A. WALKER,

VICE PRESIDENT, TREASURER AND GENERAL MANAGER OF THE JOSEPH DIXON CRUCIBLE COMPANY.

The Man Who Lifted the Cup!

MR. JOHN A. WALKER HOME FROM EUROPE.

Dixon Crucible Co. Vice-President's Interesting Talk on Business Situation.—Europeans Afraid of American Enterprise.—Many Inquiries About Trusts—Business Depression on the Continent.

Free Library Trustee John A. Walker was again at his desk this morning in the vice-president's office of the Joseph Dixon Crucible Company's building on Wayne Street, after an enjoyable tour through Europe. Mr. Walker's journey was a business trip, but he found time to make some interesting observations. He left Jersey City on June 17, and was home again on Tuesday morning, after an absence of exactly five weeks.

"One of the notable features of my trip," remarked Mr. Walker to-day, "was the unusually calm weather. During the trip to Europe on the Kaiser Wilhelm der Grosse, and during the return trip on the Kronprinz Wilhelm the sea was as smooth as it is to-day on the Hudson River. The trip on the Kronprinz was a treat never to be forgotten. That ship is, in my estimation, the finest vessel and most comfortable steamship on the Atlantic Ocean."

"I was in Paris when the news reached France that the coronation of King Edward had been postponed on account of the King's illness. The lack of genuine sympathy was noticeable. The French could not conceal entirely their

satisfaction and there was no sign of grief when on the bulletin boards in Paris there was displayed the incorrect announcement later in the day that the King had died.

"In Germany the feeling toward England was more friendly. In Prussia and other German kingdoms it was interesting to note the intense interest with which the average European regards American trusts. Everybody on the other side of the ocean seems to have heard of these combinations of capital and the European, as a rule, is afraid of them. Even the humblest servant in the hotels is concerned, and questions the American tourist about the ultimate effect of these vast aggregations of capital. American enterprise is a revelation to the people across the sea. The pluck and energy displayed by American financiers is marvelous in their eyes, and fills them with fear that America will leave Europe far behind in the race for commercial supremacy.

"I visited Vienna on the day the automobile race from Paris to the Austrian capital was won by the Frenchman, Renault. Vienna was alive with automobilists. The machines filled the streets and the chauffeurs were noticeable everywhere.

"I visited England on my way home after a tour through the continent, and I found time to take a day off and enjoy the boat races at Henley on the Thames, about thirty miles above London. This race was a sight worth seeing. At least 1,500 rowboats filled with spectators, were lined along the course. Along the river side were house boats beautifully furnished and magnificently decorated. The interest in the race was intense.

"In Belgium business is very dull. In fact, the business done is only about one-third of what used to be done before the present depression. The Belgians are suffering from business depression to the same extent that we suffered here in 1893. In Germany the situation has also been very bad, but it is improving. All over Germany the business men rejoice over the close of the Boer war, and are hoping that prosperity and revival of business will follow the cessation of hostilities in and the development of South Africa. In France and Holland business is dull, too.

"The English people's ability to bear grief and affliction with fortitude was again demonstrated when the coronation was postponed and the extensive programme of the festivities had to be canceled. One could not help admiring the readiness and patience with which the British bore their fresh trouble after the many trials through which they had to go on account of the Boer war."—*Erening Journal, Jersey City.*



PRESENTED TO HON. JOHN A. WALKER,
Friday Evening, July 25, 1902.

"Join in the cup—the love-filled cup
Of those who sit in circle here;—
Join in the cup and bid it brim
With all in Life that most holds cheer."

When a man is possessed of true ideas and high ideals and loyally and lovingly accepts his workplace in the world and by his example and influence leads others to not only do their work well but to become enthusiasts in it, then he may well say:—

"It matters not how strait the gate,
How charged with punishments the scroll:
I am the master of my fate,
I am the captain of my soul."

The business and social character of Mr. Walker has been absolutely above reproach. He has always believed that high ideas and high ideals were divine forces, and in living up to them himself and in insisting that all who are connected with the Dixon Company shall at all times carry out his ideas, so far as the Dixon business is concerned, he has made for himself and the Dixon Company a most enviable name throughout the business world, at home and abroad.

Some sample messages printed elsewhere, and the love and affection shown Mr. Walker at the dinner given in his honor by the Dixon staff, July 25, 1902, but faintly express the *esprit de corps*.

The following members of the Dixon staff were present at the dinner (the year opposite name showing date of connection with the company):

JOHN A. WALKER,	1867	J. M. READY,	1888
JOHN A. TRACY,	1874	J. BARTLEY,	1888
GEO. E. LONG,	1877	A. L. HAASIS,	1889
T. B. VALLEAU,	1879	J. W. ROBOTTOM,	1893
HARRY DAILEY,	1880	FRED. TOLFREE,	1893
WILLIAM KOESTER,	1880	W. B. ALLEN,	1896
F. ENGELBRECHT,	1882	J. A. CONDIT,	1896
H. E. WESTERVELT,	1885	C. H. SPOTTS,	1898
W. J. COANE,	1885	GEO. NEIGHBOR	1899
ALBERT NORRIS,	1887	F. S. HYDE,	1899
S. E. DARLING,	1887	H. A. NEALLY,	1901
M. MCNAUGHTON,	1887	D. M. HOWE,	1901
		H. H. BUSH,	1901

The following is the report of the dinner made by Mr. H. A. Neally for the *Evening Journal*, of Jersey City:

THE BANQUET.

One of the private dining rooms of "The Arena," New York, was the scene of a delightful dinner last evening, given by the members of the Dixon staff, in honor of their vice-president, Hon. John A. Walker, who has recently returned from a five weeks' business trip abroad. It was the idea of the committee in charge to give their chief a warm welcome, and the idea was carried out to perfection.

Shortly after seven o'clock the members of the party assembled in the dining hall. Much taste was shown in the decoration of the table, where cut flowers were effectively arranged, and at each plate were cards bearing the names of those present with appropriate quotations, and the subject on which each person would be called upon to speak.

The dinner consisted of an elaborate *menu* of ten courses, enlivened with mirth and music, which continued throughout the evening. At the close of the repast cigars were lighted, and an entertaining portion of the programme followed.

Mr. Harry Dailey gracefully presided as toastmaster and introduced as the first speaker of the evening Mr. Long, secretary of the company. After a few pleasing remarks Mr. Long produced many interesting epistles and dispatches of congratulation from members of the company in various sections of the world, in all of which the kindest wishes for the health and happiness of Mr. Walker were expressed.

The first letter Mr. Long read was from Mr. E. F. C. Young, president of the company, which was as follows:

"On Friday evening will be gathered together some of the men that are uppermost in my mind at all times. They will meet for only one purpose, and that is to honor one of Nature's noblemen (Hon. John A. Walker). It has been my pleasure to be with him nearly twenty-two years, and he is the same genial gentleman to-day as in 1881. A lovely man, with a lovely disposition, and is entitled to be the recipient of a lovely 'loving cup.'

Sincerely yours, E. F. C. YOUNG."

Mr. Young's letter was greeted with enthusiastic applause, and at its close Mr. Long, with well chosen words, presented Mr. Walker with a beautiful sterling silver loving cup, the gift of the Dixon staff, who took this pleasing way of manifesting their love and esteem for their respected leader.

The following was engraved on the cup:

To
Hon. John A. Walker,
Vice-Pres't Joseph Dixon Crucible Co.,
From
The Dixon Staff.

With Best Wishes and Loving Remembrances.

"While there's life on the lip,
While there's warmth in the wine,
One deep health we'll drink
And that health shall be thine."

Although taken by surprise and deeply touched, Mr. Walker was equal to the occasion, and after expressing his heartfelt gratitude, made a speech which was the event of the evening. During his discourse he carried his listeners on a delightful journey from the new world to the old, beginning with a charming trip across the sea in a palatial ocean liner, followed with a tour through the picturesque countries of Europe.

The characteristics and customs of the people, interesting sights in historic cities and fascinating glimpses of picturesque mountains and valleys, were vividly portrayed by Mr. Walker. The kind expressions which greeted him from all sides was a fitting demonstration of the high regard in which Mr. Walker is held by the members of his staff.

In response to the toasts many clever speeches were made and amusing stories were related, and the advent of another day was approaching when one of the pleasantest social occasions in the history of the Joseph Dixon Crucible Company passed into history.

SAMPLES OF LOVING CUP MESSAGES FROM ABSENT MEMBERS OF THE DIXON STAFF.

May the propitious years be many yet to come, and may the sunshine of health and prosperity continue to fall upon "the man at the wheel"—who guides the Dixon craft.

Let this loving cup represent our love and esteem for our Vice President and Manager—a memento of his distinguished administration; of his able, fair, well directed and tireless energy.

May he accept this cup with the assurance that "every one of the boys" holds him in the highest esteem.

J. FRANK DRAKE,
Montgomery, Ala.

May the cup be filled forever with health, happiness and prosperity.

S. H. DOUGHERTY,
St. Louis, Mo.

May the cup of your life be always full of love and blessings and so earth will be heaven to you.

Believe me your loving friend,
GEO. G. MCLEAN,
Portland, Conn.

Though mountains, seas, hills and streams divide us, I shall be there in spirit, enjoying the good things your loving hearts have provided, to make this occurrence one of

love, esteem and devotion to one who has ever shown himself fully up to the mark as most worthy of the devotion and consecration of each of us.

I send my kindest greetings, best wishes, love and devotion to Mr. Walker. C. E. HERRICK,
Crystal River, Fla.

In this telegram find a barrel of happiness to fill your loving cup. May it always overflow.

DUDLEY A. JOHNSON.

May the three handled cup, which is typical of the three-fold position you hold in the Dixon Company, always be emblematical of the esteem, love and honor in which you are held. GEO. HOWARD REED.

I am very glad, and feel much honored in being counted in with the Dixon staff in expressing my love and esteem for Mr. Walker.

I have been in the employ of the Dixon Company many years, and, knowing Mr. Walker as I do, I would, if my health and age permitted, willingly go over it all with him again, and I hope that Mr. Walker will be favored with good health for many years to come and make some other fellow happy who may be selected to take my place, as I have been made happy by him.

WILLIAM HOOPER,
Ticonderoga, N. Y.

Welcome home! I regret sincerely it is not my good fortune to be with you all to-night, so I join hands across a thousand miles of space to the welcome home. If there is room in the cup for a drop of my love and affectionate regard for our honored and respected Vice President, please put it in.

SAM MAYER, Chicago, Ill.

I send my welcome and greetings to Mr. Walker.

A. K. INGRAHAM,
Toronto, Canada.

I want to express my esteem and affection for one who is to us truly a captain, not only of industry in an economic sense, but in the broad field of intellectual worth and inspirational method.

E. A. ST. JOHN,
Kansas City, Mo.

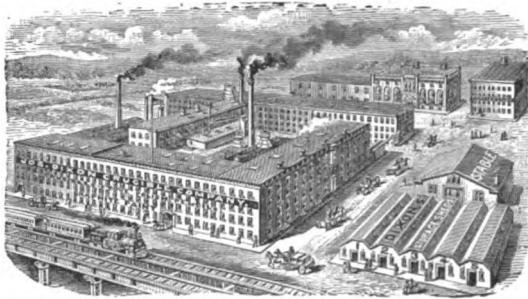
ELBERT HUBBARD'S IDEA OF PAY.

The law of wages is as sure and exact in its workings as the laws of life. Every employe pays for superintendence and inspection; some pay more and some pay less. That is to say, a dollar-a-day man would receive two dollars a day were it not for the fact that some one has to think for him, look after him, and supply the will that holds him to his task. Incompetence and disinclination require supervision, and they pay for it and no one else.

The less you require looking after, the more able you are to stand alone and complete your tasks, the greater your reward. Then if you cannot only do your own work, but direct intelligently and effectively the efforts of others, your reward is in exact ratio, and the more people you can direct, and the higher the intelligence you can rightly lend, the more valuable is your life.

ESTABLISHED 1827.

INCORPORATED 1868.



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President. *Vice Pres. and Treas.* *Secretary.*

JERSEY CITY, N. J., September 1902.

TURN TABLE TROUBLE CURED BY DIXON'S GRAPHITE GREASE.

A bridge foreman of a prominent road writes us as follows:—"A little over a month ago, we had trouble with one of our turn tables turning very hard, taking six to eight men to turn one engine. This class of table should turn one of our heaviest engines by two men if in good order.

"The center pivot had been cleaned and oiled with sperm oil and beef tallow, a day or two before complaint was made. I went to the table myself, had the center pivot cleaned and oiled again, but the result was no better, the pivot bearing had begun to cut.

"I then had all the oil cleaned out, reduced some of Dixon's Waterproof Grease with sperm oil to about the consistency of butter, and put it in the pivot socket. Then I put on one of the heaviest class engines and two train men turned her in one minute.

"A few days ago I examined the pivot, and found that the graphite had worn away but very little, it had thickened somewhat, and I added a little oil and will try it again in another month.

"The weight of the engine and table on pivot is about 200,000 pounds, the bearing is an 8 inch steel pivot running on an 8 inch bell metal loose disc. The table is 60 feet in diameter.

"I have since oiled two other turn tables 65 feet in diameter with Dixon's Graphite Grease."

A 'FRISCO SHIPMENT.

Last month we made a shipment to San Francisco of 403 packages of assorted goods. The total weight was 85,935 pounds, and the shipment was made via American-Hawaiian S. S. Company.

DIXON'S GRAPHITED WOOD GREASE.

FREMONT, O., May 17, 1902.

*Joseph Dixon Crucible Co.,
Jersey City, N. J.*

DEAR SIRS:—The barrel of Dixon's Graphited Wood Grease ordered some time ago has been put in use and has been thoroughly tested.

We find that it is by far the best gear lubricant which has yet come to our notice, and is an all around money saver.

It wears longer, it deadens the noise of the gears and by its use we have no more dirty, oil splashed motors.

Have to-day placed an additional order and would ask you to kindly hurry same to us.

Respectfully yours,

R. R. FREHLAN, Supt.

LAKE SHORE ELECTRIC RAILWAY CO.

OUR ADS ARE FAR-REACHING.

MARSOVAN, June 16, 1902.

DEAR SIR:—I have read your advertisement in a newspaper, that your reputation is extended to the uttermost parts of the world, and became very interested of your work, and now I wish to buy from you Graphite Pencils to our store. If you please send me some of your pencils for sample, if it seems to me pleasant I will admonition two or three boxes. And write me your discount, also send your catalogue and price list. Awaiting your answer.

Yours truly,

MILTEADES KYRIAKOW.

MARSOVAN, via Constantinople, Turkey-in-Asia.

The Hon. W. Bourke Cockran, in an address to the graduates of Manhattan College, said:

"I have been some time in this world, and the result of my experience is that there is one way by which success may be obtained with ability. In all my life I have never known an instance of undiscovered merit. There are too many seekers to allow ability to remain hid. If you possess ability and were placed in a diving bell and lowered to the bottom of the sea, expeditions would be fitted out to discover you and bring you back.

"No matter what calling you embrace, if you have ability you will be in demand. If a lawyer, think how many persons there are in trouble who would be seeking your advice. If a physician, how many there are who are ill, who would want your services. If an architect, how many who desire better houses built. I have heard it said that a young man needs a pull to get a start. Pay no attention to that. If you have ability you will win."

Graphite

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OCTOBER 1902.

No. 11.

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THE BUSINESS MAN.

A man with a "dinkey mind" spoke rather sneeringly of the "Fra" as a business man. The Fra replies, "Am I a business man? If so, I am glad. To refer to me as 'commercial' does not hurt my feelings. The world of commerce is just as honorable as the world of art, and a trifle more necessary.

"Art exists on the surplus that the business men accumulate. Art, literature and music subsist on the science, and patronage and encouragement the business men supply.

"Business means taking things from where they are plentiful to where they are needed.

"Business means making things that people want.

"To be a business man implies that you are orderly, systematic, exact, competent, reliable; that you keep your promises (and expect others to do the same); that you are on time; that you pay your debts; that you set idle men to work, and see that they do the job properly and well.

"Business men build factories, towns, railroads; they tunnel mountains, drain sewers, dredge rivers, pave streets, supply vast cities with pure water, create transportation and a thousand and one conveniences for lubricating the wheels of existence.

"That is to say, the business man serves humanity, and helps himself by helping others."

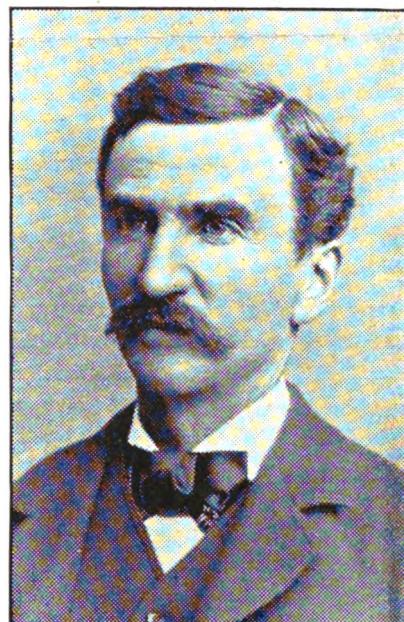
IN MEMORIAM.

Summer beauty was on the landscape of Lake George Saturday afternoon, August 9, 1902, when we gathered on the sad sward for the burial of William Hooper. It is the first break by death in the Dixon staff. He was laid away for his long rest in Mount Hope Cemetery, at Ticonderoga, where the view of mountain and lake is matchless.

William Hooper was a mining engineer of high rank. Fifty years ago he came from Cornwall, England, to America, and over forty years ago cast in his lot with the Dixon Company at their Ticonderoga graphite mines, where uninterruptedly he remained till the day of his death. He was regarded as the first graphite engineer in the world.

As a professional man, his advice was sought by many,

being well equipped in the technique and practice of his profession. His original work in the way of concentrating machinery is regarded as the best of its kind. Sliders or dressers, roll crushers, sizing machinery, came from his mind and revolutionized previous practice.



WILLIAM HOOPER.

As a manager, he was careful of his men, prompt, thorough, economical and painstaking.

As to his personality, he was every inch a man—brave, reasonable, teachable by events, honorable and possessed of all the thrifty traits.

As a citizen, he was the first man in Ticonderoga; everybody looked up to him and regarded him as the town's model citizen with his family. He married early in life and lived to three-score years and ten and saw his children and grandchildren come, one after another, in true patriarchal style.

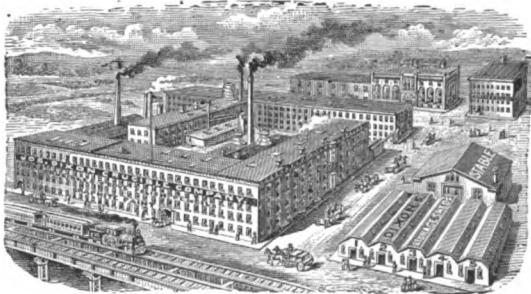
He is missed at the works; he is missed in town; he is missed at his home—his friends feel that a man of true gentleworth has passed away.

To look back, you see a useful life, full of work, benefiting the world. You see his duties all performed, his career rounded out. One of his desires was to be of use in the world and his wish was granted. It was not luck, but a clean-cut definite working toward a given aim and earning success. *Requiescat in pace!*

—J.A.W.

ESTABLISHED 1827.

INCORPORATED 1868.



JOSEPH DIXON CRUCIBLE CO., JERSEY CITY, N. J., U. S. A.

SALESROOMS AT

**68 Reade St., New-York. 1020 Arch St., Philadelphia.
304 Market St., San Francisco. 26 Victoria St., London.**

RESIDENT REPRESENTATIVES AT

**Boston, Chicago, St. Louis, Pittsburg, Paris, Hamburg, Vienna,
Amsterdam, Brussels, Berlin, Dresden, Milan, Lisbon, Copenhagen,
Warsaw, Barcelona, Bergen, Horgen (Switzerland), Finland.**

**GRAPHITE MINES AND MILLS AT TICONDEROGA, N. Y.
CEDAR MILLS AT CRYSTAL RIVER, FLA.**

OFFICERS:

**E. F. C. YOUNG, JOHN A. WALKER, GEO. E. LONG,
President. Vice Pres. and Treas. Secretary.**

JERSEY CITY, N. J., October 1902.

GRAPHITE LUBRICATION.

BY HUGH D. MEIER.

Automobiles placed on sale within the last year by American manufacturers are quite generally equipped with improved lubricating devices. A number of makers now furnish magazine oilers or other types of central oilers as standard equipment, and it is a hopeful sign of the times that primitive devices and systems are giving way to more up to date methods.

Oil is a very satisfactory lubricant for running bearings, provided that the best oil for the particular work is used and the specific pressure on the journal is not too high. In case of a hot box the oil will "flee away" from the journal when it is most needed. Thick oil does not lubricate as well as thin oil, and there is more internal friction in the former itself than in the latter. Wherever the pressures are high, however, only heavy oil can be used. Grease may be employed with good results in the common types of grease cups in connection with all bearings that do not require regular lubrication. To force the grease out the cap of the cup must be screwed down. Even though a coiled spring and a piston be used in the cup, it will cease to feed as soon as the pressure is relieved. In case of heating, however, the grease will melt and flow freely to the bearing, but cease to flow when they both cool down. It lubricates automatically in such a case. I do not wish to advocate the use of grease only and alone in connection with boxes that are liable to run hot, because heating of bearings should be prevented in the first place. Wristpins of single

acting engines must of necessity remain hot as long as the latter are running and for a long time after the stop. To lubricate these pins with grease would be an unwise thing to do. In a vertical engine feeding would soon cease and in a horizontal one the lubricant would soon flood the wristpin and then discontinue feeding. A motor of the inclosed type would not be equipped thus, anyway, for obvious reasons. An engine with an open frame may be fitted up with such a cup, which, however, could not be screwed up as long as the connecting rod was in motion.

In contrast with oil and grease, flake graphite fills up all pores, grooves and irregularities of wearing surfaces, and presents a new and bright surface which offers little resistance to the running part. Where the temperature is high, as in motor cylinders, it will guard against binding and freezing of the piston should the engine be called on to run for sometime without a fresh supply. Oils will carbonize at 500 to 600 degrees Fahrenheit, but graphite is not affected by over 2,000 degrees Fahrenheit, which is the approximate temperature of the exploding gases in the cylinder of a gasoline motor. The cylinder walls may attain an average temperature of 300 to 400 degrees Fahrenheit. Adjoining the explosion chamber the temperature is higher and oil is decomposed when it reaches that region.

To obtain a regular feed it is necessary to provide a vehicle or agent to carry the graphite to the wearing surfaces. Water, steam, oil and grease may be used in this capacity, and with a properly proportioned mixture it may be fed by lubricators intended for either the former or the latter of the two lubricants named. Five per cent. of graphite and 95 per cent. of oil is a satisfactory mixture in the majority of cases. If the percentage of graphite is much greater there is danger of clogging the passages. With a proper mixture the vibration of the machine will prevent the settling of graphite, despite its higher specific gravity. Graphite may be mixed with grease in equal parts, but it is not advisable to do so. In this agent it remains suspended, which is not the case when mixed with oil.

Crosshead slides of steam carriage engines are not always provided with proper means for lubrication. Here is a good place to apply graphite, because of its mechanical affinity to iron and its lubricating qualities. Mix the graphite with oil until a paste is formed, and apply it to the slides, even though the oil cups give satisfaction. Should a crosshead "freeze" to its guides the results may be disastrous. In all cases where the crank-shaft's bearings and the reciprocating parts are lubricated by splash, the addition of a little graphite to the oil may prove beneficial. Rawhide gears are said to run in oil well, but experience teaches us that oil softens the teeth, while water soon destroys them. Graphite rubbed into the material in its dry state, it is said will serve as a good lubricant. Chains should not be only well oiled but kept from dust. Oil alone makes a compound with the gritty matter which increases friction and wear to a great extent. Oil and graphite paste or grease and graphite will keep off the dust, if the percentage of graphite is high enough. All cyclists have satisfied themselves that this is true. Graphite may be successfully used in ball or roller bearings as well as in

bushed bearings. To apply it, it is necessary, in most cases, to mix it with a carrying agent. Bearings equipped with wick oilers will not feed oil and graphite, because the latter will adhere to the wicks and soon clog up the ducts. Oil cans will feed dry graphite if the spout is not too small.

Prof. R. H. Thurston, of Cornell University, carried on some tests with winter sperm oil, grease and graphite, which were very satisfactory. The appended table gives the results of one of these tests.

	Quantity in Milligrams.	Pressure on Bearing Per Square Inch	Number of Revolutions Per Minute.	Time in Minutes Till the Bearings "Squealed."	Total No. of Feet Friction Surface Traveled.
Best sperm oil.....	335	60 lbs.	2,000	51	33,360
Best quality of lubricating grease.....	335	60 "	2,000	51	33,360
Same grease containing 15% graphite.	335	60 "	2,000	293	194,491

It will be seen that the journal ran almost six times as long when grease and 15 per cent. of graphite were employed as lubricants, as they did with oil or grease alone.

According to Prof. Alb. Kingsbury, graphite reduces the friction of wearing parts about 40 per cent. over either oil or grease.

Graphite should be looked on as a safeguard and used freely about a motor vehicle. Without oil it will not do as a lubricant for the pistons of explosive motors, since the presence of a lubricant of sufficient viscosity is required to prevent leakage.—*Horseless Age*.

A NEW SYSTEM OF CYLINDER LUBRICATION.

Dixon's Flake Graphite and Cylinder Oil.

We illustrate and describe herewith a new system of graphite lubrication which is being exploited by our London Branch.

The lubricant consists of Dixon's Pure Flake Graphite, mixed in certain proportions with a special quality of high flash-point cylinder oil, to form a thick paste.

The mixture is introduced into a lubricator of special design, forcing the lubricating mixture through one or more pipes to the engine steam chest or cylinders. A speed-reducing gear is provided, driven by a narrow leather belt, or other means, from the crank shaft of the engine, so that the driving motion of the lubricator is operated upon only twice per minute.

The length of the stroke of the driving motion can be varied to adjust the number of teeth engaged per stroke. The quantity of the mixture delivered to the engine per minute is under complete control, and once adjusted is constant and requires no attention.

The lubricator and gear are quite simple, and can be fixed on any suitable part of the engine, or some distance away from the engine. The cost of the apparatus is paid in a few months by the saving made in lubricants.

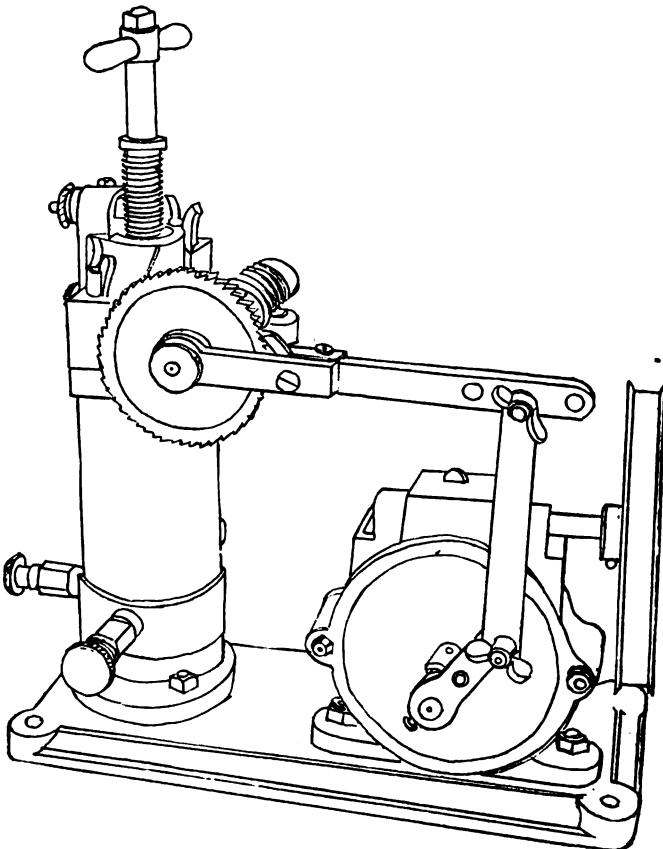
The following are the advantages claimed for this system of lubrication.

1. The graphite mixture is a better and more durable lubricant than plain cylinder oil.
2. Friction is greatly reduced, also the wear of all rubbing surfaces.

3. Cylinders, piston rings, valves, and rods become smooth and highly polished, and the packing material lasts longer.

4. The internal parts of an engine do not become rusty where this mixture is used.

5. The quantity of lubricant used is greatly reduced, one small drop per minute being sufficient for engines up to 600 h. p.



6. The cost of lubrication is considerably reduced.

7. The amount of oil put through an engine is reduced to one-twentieth of what was previously required.

8. When the condensed steam is used again as feed water to boilers, the small amount of oil used is a very great advantage, in view of the damage caused to boilers by oil in the feedwater. The air-pump is kept well lubricated by the graphite passing through with the water.

9. Where superheated steam is used, the graphite lubricant will stand the high temperature.

10. The feed is regular, and the lubricator starts and stops with the engine, no waste occurs, and the lubrication is not dependent on the attention given to the lubricator.

11. One filling of the lubricator will last between one and two months without refilling, according to the hours of running.

The most important reason for reducing the consumption of oil in steam engine cylinders is not so much the economy in the cost of oil, but the desirableness of using less oil, and so of having a smaller quantity to deal with in the exhaust.

This, of course, applies particularly to condensing engines, and any method reducing the quantity of oil possible to be returned to the boiler with the feedwater will, we are confident, meet with endorsement.

Besides this point, the system of lubrication we are now

offering has the method of economy, and is just as economical in use on non-condensing engines.

Constant use of this system on large size engines for more than two years has demonstrated that engine cylinders are better lubricated by this system than with oil alone, and at an enormous saving.

When the statement is made that 575 h. p. triple expansion engines are being run, with cylinders lubricated with our graphite mixture, at the rate of half-pint per month, it would appear that the problem of economical cylinder lubrication had been solved.

The same system is in use on direct-acting compound steam-driven pumps, and on a locomotive.

TESTIMONIAL.

I have high-speed (Willans) triple expansion (3 crank, 9 cylinder) engines of 800 h. p. at work, using one drop of the Dixon graphite mixture per minute; engines of 575 h. p. using less than one drop per minute; and similar engines (2 crank, 6 cylinder) of 50 h. p., using $\frac{1}{3}$ of a drop per minute, all with most satisfactory results. The lubricators require filling once in two months. The above has been in use for 18 months.

W. H. MILLER, M. I. C. E.,
Chief Engineer, K. & K. E. L. CO.
K. & N. H. E. L. CO.

GRAPHITED MANILLA ROPE.

The best manilla rope preservative is the treatment with Dixon's Ticonderoga flake graphite. The American Rope Manufacturing Co. write as follows: "We have gone to the bottom of the matter of rope preservation, by a scientific method of preserving our ropes by treating the inner yarns of each strand as well as the core in a bath of lubricant, the ingredients of which are Dixon's flake graphite and oil. When the rope thus treated is put into service, this lubricant thoroughly permeats all the fibre, thus overcoming internal wear, while sufficient comes to the surface to afford ample protection against injurious outside agencies.

"This lubricant, as we prepare it, never leaves the rope. The oil is used as a vehicle to convey the flakes of graphite, and as long as the strands and yarns remain together they are thus kept soft and pliable.

"Ropes so treated are self-lubricating and need no external dressing."

This information, which comes from the leading rope makers of the country, is of value to those about to buy rope and also to all ropemakers to go and do likewise.

—J. A. W.

CONVINCING EVIDENCE OF THE WEARING QUALITIES OF DIXON'S SILICA-GRAPHITE PAINT IN ITS USE IN DIFFERENT CLIMATES.

One From The South.

BEAUFORT, S. C., May 17, 1902.

Joseph Dixon Crucible Company.

GENTLEMEN:—Please ship us two kegs Dixon's Silica-Graphite Paint, color No. 2. This is the best paint for tin

roofs that we know about, and it stands our climate and salt air better than anything else we have ever seen.

We won't use anything but your Pipe-Joint Compound for fitting up, and would like to try your Belt Dressing next fall when the cotton season opens, if you will send us samples.

Yours truly,

W. M. P. WATERHOUSE & COMPANY.

Another From The West.

WALNUT, IOWA, May 28, 1902.

In reply to an inquiry in regards to elevator paint, may say that I have had considerable experience with same, and find nothing that will compare with Dixon's Silica-Graphite Paint. I painted my elevator with this paint *eight years ago*, and the same is in fair condition to-day. I am going to re-paint this summer, and would put on nothing else but this paint.

There are a number of inferior graphite paints on the market, so one must be careful to get the genuine.

Yours truly,

W. C. SIEVER.

Along The Connecticut Sound.

CLINTON, CONN., May 29, 1902.

We have enough Dixon's Silica-Graphite Paint on hand for present needs, but you will hear from us again when in the market. If we had a hundred roofs to paint, would use nothing but the Dixon Silica-Graphite.

Very truly yours,

THE L. L. HULL COMPANY,
S. G. REDFIELD, Prop.

The property owner saves money when he insists upon his roofs being properly painted with Dixon's Silica-Graphite Paint.

CAPSULATED LUBRICATION.

W. W. Donaldson, Litchfield, Ill., says in *The Automobile Magazine*, June, 1902:—I have what I consider is a most excellent way to use graphite for lubricating cylinders. Take the ordinary 3-grain gelatin capsules, such as are used to give medicine in, have them filled with graphite and kept handy. When you want to use one, fill your oil cup, drop in a capsule and go frictionless about your business.

I have found this to be the cleanest and most satisfactory way to employ graphite in connection with the ordinary oil cup lubrication.

INGRATITUDE.

I think it ill becomes a Man—
(Though he be sorely swat)
Because his House was blown away,
To grumble at his Lot.

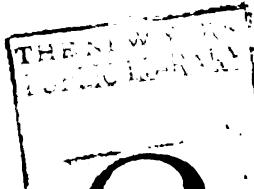
—S. B. IRELAND in *The Philistine*.

THEN AND NOW.

As late even as 1800 only five residents of New York City could afford to keep a coach. One of the owners referred to his as a "leather convenience" as an apology for such worldly display.—*Wingate's Historical Handwork*.

Graphite

Oct 25



VOL. IV.

NOVEMBER 1902.

No. 12.

Issued in the interest of Dixon's Graphite Productions, and for the purpose of establishing a better understanding in regard to the different forms of Graphite and their respective uses.

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A FLAKE OF GRAPHITE.

An Interesting Explanation as to Why and How Graphite Lubricates, and Why Dixon's Flake Graphite is the Best Form of Graphite for Lubricating Purposes.

A careful examination of a flake of Dixon's Lubricating Graphite will at once make clear why this form of graphite is the most suitable for lubricating purposes. It is well known that graphite occurs naturally in both the crystalline and the amorphous form, but the latter being usually intimately associated with earthy impurities, such as clay, for instance, is not at all suited for lubricating purposes. The crystalline form is the one which is most exclusively used for this purpose.

Many elemental substances and compounds assume the crystalline state, on being left after the evaporation of a solution; or on solidifying to a molten state; or on being condensed from the state of a vapor. If these crystals could form without any disturbing influences such as is due to movement or pressure, they would be geometrically uniform, and if they were formed from solutions at the same rate of evaporation or from a molten mass at the same rate of cooling, their size would be practically the same, but in the processes of nature these ideal conditions do not exist.

For instance, the outer portions of a mass cooling first would be subject to very different conditions of stress than the interior portions cooling later on. Tremendous movements of one strata of rock upon a cooling mass would exert also a great influence on the size and formation of the crystals, although some distinguishing characteristics always remain.

And so, if one will open a cask of Ceylon graphite they will find samples of two very distinct forms of crystallization; one foliated like molybdenite or, less exactly, like mica, and the other columnar like asbestos, but the bulk of the cask will consist of very irregular pieces of a structure anywhere between these two. The contents of the cask might be compared to the ellipse, the limiting value of which are the straight line and the circle, but the ellipse is known ordinarily to be anything between these two forms. The percentage of the foliated variety of crystal,

which exists in the Ceylon graphite as it comes on the market, is far too small to make Ceylon graphite a source of supply for this particular form. On the other hand the graphite which occurs infrequently throughout the Appalachian Range of Mountains and abundantly near Ticonderoga, N. Y., is all this foliated form, and so this section has become the great source of supply of graphite for lubricating purposes.

The graphite from the Dixon mines occurs in the form of a fine, thin flake, scattered through the containing rock, special processes of milling being employed to make the necessary separations. It is most desirable to give particular attention to a consideration of the size and shape of these flakes in order to better understand why this form of graphite is so clearly indicated for lubricating use. If one will place a few flakes of this form of graphite in the palm of the hand and try to feel them with the tips of the fingers, it will be found that their thickness makes no impression whatever on the very sensitive nerve tips.

Now, if you take a micrometer caliper and measure the thickness of a number of these flakes, you will find that the thickness will vary from .001 of an inch down to a thickness so small as to be hardly indicated on the vernier of the caliper, say, .0002 of an inch, a conservative estimate of the average thickness would then be .0003 of an inch or $\frac{1}{3}$ of the thickness of ordinary writing paper.

These flakes are approximately circular with an average diameter of about $\frac{1}{16}$ of an inch, so that if, for purpose of comparison, you will magnify a flake to the thickness of a piece of writing paper, you will find that its diameter then will be about $\frac{1}{4}$ of an inch, so that the form of the flake of the graphite may be considered as practically the same as a piece of paper $\frac{1}{4}$ of an inch in diameter.

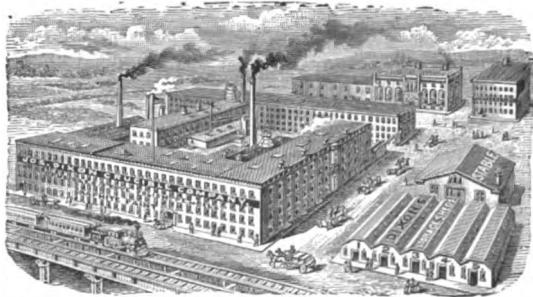
Everyone knows how difficult it is to remove a small piece of paper of this form from the floor or desk by means of a broom, and the same reasons which cause the paper to adhere to the floor or desk, cause the flake of graphite to adhere to the surface which it is intended to lubricate. These flakes tend to cover over the entire frictional surface, filling up all depressions and bringing the surface much nearer to a state of perfect smoothness.

The particles of graphite do not act at all in the same way as a globule of oil rolling between the frictional surfaces: its form permits no such action as this. It must be considered simply as a coating on the metallic surfaces, which brings about a reduction of the solid friction between those surfaces.

Continued on next page.

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President. Vice Pres. and Treas. Secretary.

JERSEY CITY, N. J., November 1902.

Continued from first page.

There never need be any fear that Dixon's Flake Graphite will build up on itself to the extent of causing the moving parts to bind, because graphite is the softest of all minerals, being worn down easily by rubbing with the fingers, so that any tendency to build up is at once overcome by the wearing of the moving surfaces.

One decided advantage, in an economical way, lies with the flake form over the granular form, due to the fact that the lubricating effect occurs on the surface of the graphite itself, and pound for pound the flake form exposes many times more surface than the granular form. If we may imagine a cube of graphite .01 of an inch on the edge, cut into 100 slices, the slices would have an area, not counting the edges, 100 times as great as the original cube, from which they were taken.

GOOD SALESMANSHIP.

A First Class Salesman Doesn't Let a Customer Throw Him
Off the Track.

Domestic Engineering says: Since salesmanship is really a science and a profession and is fast becoming recognized as such, salesmen, as a class, should go at their work more scientifically. Take, for example, the case of a man who is selling some high-class specialty. In most cases when he calls on a customer he begins his story wherever he happens to and goes through in a sort of haphazard way. Not once in a hundred time does he cover all the strong points of his goods, and he is extremely likely to omit exactly the point which would have been the strongest with the man he is

talking to. There is only one logical and convincing way to tell any story or make any argument, and many of the best salesmen I know have gone so far as to write out exactly what they want to say to a customer and commit it to memory. To some people this may seem like a parrot-like performance, but it doesn't work that way in practice. At any rate, every salesman would find it a good plan to write out his argument in the strongest way he can and then, if he does not memorize it, at least get firmly fixed in his mind the main points in the argument in their proper order.

Another thing. A first-class salesman doesn't let a customer interrupt him and throw him off the track. When a customer says, "Yes, but I think I can get a larger discount somewhere else," the up-to-date salesman answers; "Possibly. We'll talk about that in a minute. Just now I want to show you exactly how this gas engine or typewriter or automobile works," and goes ahead with his argument. If he stops to answer every objection at the time it is made he loses all the cumulative effect of his argument and quite possibly arouses a spirit of antagonism in the mind of his customer which no amount of argument will remove. If he puts off the customer with the proper kind of an answer it is more than probable that by the time he has completed his argument the customer will have forgotten his objections and the salesman will not be obliged to answer them at all. At any rate the customer will have all the strong points of the goods in his mind when the argument is completed, and minor objections will not then look so large to him.

AN AUSTRIAN DAY OFF.

The Vice President of the Dixon Company Describes a Bit of His 1902 Vacation.

It was ten at night and fifty miles east of Vienna, Austria, when the Doctor and his wife said: "Away to bed, tomorrow we will take a day off; no business to-morrow, and we will begin with breakfast on my porch."

We were called at six, coffee was served in our rooms at 6:30. Later we surrounded the table on the lawn in the heart of the slumbering mountains.

Vienna is the only city of my knowledge where within forty or fifty miles you can reach mountains 6000 to 7000 feet high.

The weather was the finest, the landscape was of great beauty, the mountains were not only high, but they looked high.

The Doctor and his wife were in mountain costume, and the house was alive with the voices of the merry younger people.

First the carriage took us to the foot hills, then dismounting, for two hours we climbed the heights of Hollenthal. The big hills lay before us in enchanting beauty. The cool morning air made us forget fatigue, forget contracts, forget prices and telegrams, and promoted the pure physical delight of being simply alive.

At noon in this grand environment we spread our luncheon and ate and drank merrily. Later a deluging shower chased us and drove us to shelter, but as the rain came harder we got the merrier, and so in this distant territory, so far from Jersey City, we passed a day off in

the Austrian Tyrol,—one day everything dropped but pure pleasure, the finest hospitality, good cheer, mountain air and mountain climbing.

Our hosts were charming. Nothing possible to the situation was forgotten.

Returning to the house, the Doctor, a leading business man and lawyer of rank in Vienna, went to the piano, and made the house ring with music and song.

Our hosts are remarkable people; they succeed in business, in the law; in the house you hear three languages spoken; the housekeeping proceeds as with no trouble. Three cheers for the Doctor and his charming wife! three more for Hollenthal, three more for Richenauer, and a tiger for this kind of a Viennese Day Off. —J. A. W.

DECAY OF BUSINESS ABILITY.

Sons of Italy as "Captains of Industry."

The Medici family in Italy were the "Captains of Industry" in their time; they brought not only their city, Florence, but the state, Italy, to the notice of the whole civilized world by commanding business talent. What happened when this talent decayed is shown in the below quoted sentence from an article by Thomas Walker Page, in the current number of *Political Economy*, published by the Chicago University.

Historians have pointed out how in the Medici family, as one generation succeeded another, there was a marked decay of commercial talent; the grandsons of Cosimo brought well nigh to bankruptcy a business that their grandfather had left rich, prosperous, and well established. Coincident with this decay of business ability in the governing family was the deterioration of the whole capitalist class. With freedom gone and their organization robbed of the power of self government, the individual undertakers could no longer bring to the management of their affairs the labor-loving energy and the aggressive, hopeful, and farsighted sagacity that had compelled success in former days. When, therefore, competition developed, they were no longer able to meet it.

—J. A. W.

THE LUBRICATING GRAPHITE DOES.

If it be not too much trouble I would like to learn from you whether some more satisfactory methods of cylinder lubrication cannot be found than those which make the use of oil an essential. I have had some experience in this line which does not tend to make me entirely satisfied with the use of oil alone.

JAMES REDINGTON,
Pomona, Cal.

The theory of oil lubrication is that with it the surfaces are kept apart or "floated" by minute globules of oil. In graphite lubrication the microscopical irregularities of the bearing surfaces are completely and evenly filled with the graphite so that the surfaces are of such smoothness that friction and heat are reduced to a minimum.

Because of this difference between oil lubrication and graphite lubrication, and because graphite is a solid substance, it is recommended that only small quantities of graphite be used, and it should be used only as needed. We believe that if more attention was paid to the employ-

ment of some good solid lubricant, like Dixon Graphite, that you, and other automobile owners, would have less cause for complaint of unsatisfactory cylinder work.

—*The Automobile Magazine.*

BRASS MELTING.

BY CHAS. VICKERS, CHICAGO, ILL.

Presented at the Boston Meeting of the Am. Foundrymen's Ass'n.

Compared with steel or iron, it is an easy matter to melt brass. On a small scale, it is frequently melted in an ordinary heating stove, or on a forge, (in the latter case, however, a temporary furnace must be formed of brick, and the crucible coked up therein). Such crude methods though, are suited only to the amateur, or where a small breakdown job is needed in a hurry by some firm not having the ordinary melting facilities.

When brass is melted on a large scale, the furnaces are a very important part of the plant, and it pays to do considerable thinking and figuring before building them. The character of the castings to be made, must always influence the size of the furnace, as small furnaces are much more economical for the production of small and light castings than large ones. This is a thing not always considered, however, so that it is a common sight to see a "30" pot put into a furnace intended for a "100." The coal dealer may never kick at this, but his debtors often do at the size and frequency of his bills.

Here then is one point in brass melting; whatever the size of the furnaces, three inches of solid fuel around a crucible will do as much work as six, and is more economical in fuel, labor and metal.

The fuel saving is apparent without a thought. The labor saving requires a little more effort to perceive. We must consider the extra shovelling and "poking down" required by the larger furnaces, while as to metal saving, some people may not see that point at all unless it is explained. Therefore, the larger the fuel surface, the greater the heat, thrown towards the furnaceman when he removes the cover, and the greater the temptation to stand away off, and "peg" the metal at the crucible when the foreman isn't looking.

Some melters become quite expert at hitting the crucible, and most of the metal charged, finds its way therein. But they can never overcome the splashing when a chunk drops into the liquid contents of the pot, and most of these splashes are lost in the fuel, and they are metal. So this is bad practice, and generally costs more than the loss of fuel. Another little point to be considered in economical melting, is never to charge up a pot, unless one is reasonably sure that the molds are going to be ready when the metal is, because it costs money to "hold" a pot in the furnace, as it is frequently done. Then again the much abused crucible will wear away as much or even more, when only half filled than when filled.

And still again, never build or allow your furnace to become "barrel shaped," high-faluting theories to the contrary notwithstanding. A straight wall is always the best.

As far as we have gone with these remarks, no particular style of furnace has been recommended as being better than others, because most brass-founders have their own theories

in this respect, and although they may differ in minor details, most solid fuel furnaces bear a general resemblance to each other, so much so that there is no other defect so serious and so universal, that lots of good strong language might with advantage be used thereon.

To be Continued.

TESTIMONIAL OF DIXON'S AUTOMOBILE GRAPHITES.

The samples of Dixon's graphites which you sent have proven themselves to be all that you claimed for them. I used the Pipe-Joint Compound on my leaky water pipes which immediately stopped all leaks. The No. 635 I used with the cylinder oil and it made the engine run so smooth that I ordered a pound can at once. The engine seems to take the hills easier and I am no longer troubled with pistons leaking steam, also the amount of oil required to properly lubricate the cylinders is perceptibly less.

Wishing you good success, I am

Very respectfully,

JAMES G. BLAINE,

Pratt, Kansas.

EXPLOSIVE PAINT.

An Official Loses an Eye and it is Proven that Paint, Like a Man, Should Have a Good Reputation.

A short time ago a barrel of graphite paint exploded in the cellar of the Bigham Hardware & Supply Company at Elwood City, Pa. The explosion was very severe, resulting in the loss of the right eye of the secretary of the company, Mr. J. E. Van Gorder, besides endangering the building by fire.

As our readers undoubtedly know, the Dixon Company are the originators of graphite paint, Dixon's Silica-Graphite Paint being known the world over. This paint is made of the famous Ticonderoga flake graphite and silica which is mined with the graphite. The silica-graphite pigment is ground in the very best fire-boiled linseed oil; no other vehicle is added and the paint is just what its name implies, it is a silica-graphite paint and its uses are for protective purposes. Roofs and iron work properly painted have not required repainting in ten to fifteen years and even longer.

The reputation of this paint has given birth to many other so-called graphite paints, some of which, as in the case mentioned above, are not only worthless but absolutely dangerous.

Where the price is fair and just and the goods of the highest reputation, we wonder why people are willing to endanger lives and property by making use of questionable goods.

OCTOBER DOINGS OF THE DIXON BOYS.

Sam Mayer paid a visit to the Dixon office and enjoyed a fast ride in a steam auto that was without a brake or a bell. Sam thought it was "great," but considers he took chances.

Uncle Dud Johnson remained at the Chicago office and looked after the Dixon business, while his side partner was testing automobiles over the Jersey roads.

Billy Allen was working Nebraska, Minnesota, Wiscon-

sin and North and South Dakota, although he has no use for a South Dakota divorce.

William J. Coane has made flying trips to Baltimore and Washington and has been busy reorganizing his Philadelphia office force. He has also been through the pangs of house moving.

John A. Condit has confined his attention to northern New York and a metal workers' convention at Buffalo.

Sam Dougherty has been paying attention to the wants of New Orleans and the larger Mississippi valley cities and back to St. Louis, and out again for Indiana, Kentucky and Tennessee.

J. Frank Drake has been looking after customers of the Dixon products in Georgia, South Carolina, Florida and Alabama.

A. K. Ingraham has been through central New York and the principal Ontario cities.

E. A. St. John has been wrestling with rainy weather in Kansas, Missouri and Nebraska, but is still "Sunny San Juan" and booms for Dixon and general good times in spite of storms and coal strikes.

"Brother" Haasis has been in New England sizing up the crucible business and dreaming of pots that will run 70 heats in coal, oil or gas fires.

John M. Ready, manager of the New York office, has been marshalling his forces for the fall and winter campaign, and is looking after visiting customers and friends. If you want to know of the best play and best restaurant, ask J. M. R.

On the far Western coast James G. Allen, manager of the Frisco branch, has been following up his several men and wondering why he cannot get more goods from the factory.

Down in Mexico Mr. R. A. Brown has been winning friends and customers for the Dixon Company. Of the Dixon boys in the far off countries, we cannot so well report. We only know that they have all been busy with Dixon work.

The Dixon family is too big to "round up" at any particular time. At the occasional family gathering there are always many "present in spirit and absent in body."

My friend, have you heard of the town of Yawn,
On the banks of the River Slow,
Where blooms the Waitawhile flower fair,
Where the Sometimeorother scents the air,
And the soft Goeasys grow?
It lies in the valley of Whatstheuse,
In the province of Letherslide;
That tired feeling is native there,
It's the home of the listless Idontcare,
Where the Putitoffs abide.
The Putitoff's smile when asked to invest,
And say they will do it to-morrow;
And so they delay from day unto day,
Till death cycles up and steals them away,
And their families beg, steal, or borrow.

—*Australasia Budget.*

B'D APR 12 1915

